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Commissioner's Perspective Points—Chapters 1 to 5 ndix Publicati

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2008



Report of the
Commissioner of the
Environment and
Sustainable Development

to the House of Commons

DECEMBER

The Commissioner's Perspective Main Points—Chapters 1 to 5 Appendix



The December 2008 Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 5, an Appendix, and five chapters. The main table of contents for the Report is found at the end of this publication.

The Report is available on our website at www.oag-bvg.gc.ca.

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Commissioner of the Environment and Sustainable Development of Canada Commissaire à l'environnement et au développement durable du Canada

Office of the Auditor General of Canada • Bureau du vérificateur général du Canada

To the Honourable Speaker of the House of Commons;

On behalf of the Auditor General of Canada, I have the honour to transmit herewith this Report to the House of Commons for 2008, which is to be laid before the House in accordance with the provisions of sections 7(3) and 23(5) of the *Auditor General Act*.

Scott Vaughan
Commissioner of the Environment
and Sustainable Development

To the reader:

I welcome your comments and suggestions on this Report and other issues related to the environment and sustainable development. I can be reached at the following address:

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The Commissioner's Perspective—2008



The Commissioner's Perspective—2008



Scott Vaughan
Commissioner of the Environment
and Sustainable Development

Introduction

I am pleased to present my first Report to the House of Commons since being appointed Commissioner of the Environment and Sustainable Development in May 2008. Work for this report began under my predecessor Ron Thompson, to whom I am grateful for his invaluable assistance.

Science indicates that we are not on an environmentally sustainable path

Four decades after national environmental laws and departments were created to clean up Canada's air and water and to safeguard biodiversity, wetlands, and habitats, Canadians still face mounting environmental problems. Despite progress in tackling such problems as lead pollution, acid rain, and ozone-depleting substances, too many smog alerts, respiratory illnesses, and days with high UV-radiation still occur. Few if any of the problems that led to the advent of the environmental protection agenda have been fully resolved.

Since the early days of the environmental agenda, remarkable progress has been made in our understanding of the complexity, fragility, and inter-connectivity of ecosystems. Advances in scientific research, applied satellite sensing, and computer modelling, together with observations from field testing, confirm that the scale and pace of environmental change is unprecedented and accelerating. The UN *Millennium Ecosystem Assessment* report (2005) warns that our planet has been transformed by environmental change more extensively in the past 50 years than in any comparable period of time in human history. The quickening pace of species extinction is largely driven by the degradation and destruction of natural habitats such as forests, wetlands, and grasslands.

Advances in medical research also uncover risks to human health from environmental contamination, including long-term, low-dose exposure to industrial and household chemicals. Some of these exposures have been linked to thyroid cancer, as well as neuro-behavioural disorders and birth defects. According to the Canadian Cancer Society and the National Cancer Institute of Canada, based on current incidence rates almost 40 percent of Canadian women and almost 45 percent of

Canadian men will develop cancer during their lifetimes, and one in four Canadians will die from cancer (Canadian Cancer Statistics 2008). Improved diagnosis, aging populations, smoking, lack of exercise, and poor diet are known to contribute to these trends. Exposure to many toxic substances also contributes to cancer, and this is an area where the federal government has a clear regulatory mandate.

The Intergovernmental Panel on Climate Change (IPCC), in its Fourth Assessment of 2007, confirms that climate change is underway. A recent federal report, From Impacts to Adaptation: Canada in a Changing Climate (2007), examines some of the national effects of global climate change, including shortages of fresh water in southern Ontario and the Prairie provinces that may become more frequent, and violent storms and flooding in the Maritimes that also may become more frequent and severe. The effects of climate change are already being observed in the North—warmer winters are weakening permafrost and putting infrastructure at risk, ice roads are closing earlier, large areas of land are sinking even as sea levels rise, and some species—notably polar bears—are becoming increasingly at risk.

A second important federal report, *Human Health in a Changing Climate* (2008), similarly warns that climate change is likely to increase some respiratory illnesses and some infectious diseases.

These are not forecasts for a distant future. These are serious problems that governments and the public must face today. As noted in *From Impacts to Adaptation*, "We have options, but the past is not one of them."

The Work of the Commissioner of the Environment and Sustainable Development

As part of the Office of the Auditor General, the Commissioner of the Environment and Sustainable Development promotes sustainable development and good environmental management by the federal government. Our work involves the following activities:

Auditing for results

Our performance audits look at whether activities designed to respond to federal environmental and sustainable development policies are well-managed, with a focus on results. We select audit topics based on a range of considerations and input. We also monitor departmental progress on recommendations from past audits, and we conduct follow-up audits of activities reported previously.

Monitoring sustainable development strategies

Departmental sustainable development strategies—Since 1995, designated departments and agencies have been required by law to prepare sustainable development strategies, and then update and present them to Parliament every three years. These strategies are meant to be the main vehicle to drive responsible management, from an environmental and sustainable development perspective, throughout the federal government.

A new Federal Sustainable Development Strategy—In 2008, the *Federal Sustainable Development Act* was passed, which requires the Minister of the Environment to develop an overarching Federal Sustainable Development Strategy with sustainable development goals and targets as well as an implementation plan for meeting each target. The Strategy will also identify the minister responsible for meeting each target.

Departments' and agencies' sustainable development strategies must now have plans and objectives that comply with and contribute to the Federal Sustainable Development Strategy.

The Commissioner's monitoring responsibilities—We assess the quality of the departmental strategies and whether the plans set out in these sustainable development strategies have been implemented. We will now monitor and report on the extent to which federal departments have contributed to meeting the targets and goals that will be set out in the Federal Sustainable Development Strategy.

The Commissioner will provide comments to the Minister of the Environment on whether the targets and goals in the draft Federal Sustainable Development Strategy can be assessed. He will also report to Parliament on the fairness of the information in the federal government's progress report on the implementation of its federal strategy.

Managing the petitions process for Canadians

The petitions process was established by Parliament to make sure Canadians get timely answers from federal ministers on specific environmental and sustainable development issues that involve federal jurisdiction. Petitions have prompted action by federal departments on topics such as new environmental projects, follow-up on alleged violations, and changes or clarifications in policies and practices. A catalogue of petitions and responses is available at www.oag-bvg.gc.ca.

Monitoring progress in implementing the climate change plans

Under the terms of the 2007 Kyoto Protocol Implementation Act, the Commissioner of the Environment and Sustainable Development must report at least once every two years up to 2012 on Canada's progress in implementing climate change plans, and in meeting its obligations under the Kyoto Protocol.

Providing better information and encouraging changes in environmental behaviour are steps in the right direction

A challenge for governments is bridging science-based evidence of environmental degradation with risk assessments and management programs and systems designed to deliver concrete results. One part of this challenge is getting the right information at the right time in order to make informed decisions. Two examples from this Report illustrate how the federal government is moving in the right direction with some of its programs to integrate new information delivery systems aimed at better supporting decision making:

Environment Canada's weather prediction and severe weather
warning systems are moving toward advanced workstations that
will allow forecasters to visualize and assess weather conditions
more efficiently, helping them to better forecast severe weather.

Agriculture and Agri-Food Canada's National Land and Water
Information Service is planning to make use of information
technology to generate up-to-date and consistent data on land
use, soil, water, and biodiversity—data to which land-use
managers and farmers could have immediate access to help them
make environmentally responsible decisions.

Addressing environmental concerns will also mean encouraging sound environmental behaviour by Canadians, including rewarding them for translating environmental concerns into green action. To succeed, Canadians need to have choices that are available and affordable, from public transportation and more recycling to renewable and green electricity.

The government is not ensuring that tools to limit harmful emissions are working

The first chapter in this report, Managing Air Emissions, examines four federal tools—regulations, economic measures, pollution prevention plans, and voluntary agreements with the private sector—intended to limit emissions of harmful substances into the air. We found flaws in their implementation, particularly with regard to providing Parliament with assurance that the results reported by the federal government have actually been achieved.

Benzene, a component of gasoline, is known to cause cancers such as leukemia. The government introduced regulations in 2001 to protect Canadians from exposure to benzene when they fill up at the gas pump. In the seven years since then, Environment Canada has still not completely identified the community to whom the regulations apply. Nationally known companies and major independent retailers are probably aware of the regulations but other retailers and wholesalers in Canada may not know about them. The regulations have not been a priority for Environment Canada, and it has done little to enforce them.

Acrylonitrile, a substance used to manufacture synthetic rubber, structural foam, and other products, was declared toxic because of its cancer-causing potential and the probability of causing harm at any level of exposure. Environment Canada published a notice in 2003 requiring a company that was emitting acrylonitrile to produce a pollution prevention plan. The Department later indicated that the

measure had been successful based on results reported by the company. However, the Department did not validate the results.

Total air emissions of acrylonitrile saw a rapid increase from 2003 to 2006. While activities by Environment Canada contributed to a reduction in emissions between 2006 and 2007, total national emissions are still almost three times higher than in 2000 when the substance was declared toxic.

Chapter 1 also looked at two economic measures intended to reduce greenhouse gas emissions. Both are included in the government's Climate Change Plans issued in response to the *Kyoto Protocol Implementation Act*.

In 2007, the government estimated that the Public Transit Tax Credit, at a cost of \$635 million, would result in annual reductions of 220,000 tonnes in greenhouse gas emissions. In 2008, Environment Canada lowered that estimate of expected emissions reductions to 30,000 tonnes per year. The program will have a negligible impact on Canada's greenhouse gas emissions, despite the reported cost.

The Clean Air and Climate Change Trust Fund, a key plank in the government's approach to addressing climate change, comprises \$1.519 billion in federal funds transferred to the provinces and territories. Environment Canada used flawed analyses and assumptions in establishing the 16 million tonnes per year it expected the provinces to achieve in greenhouse gas emission reductions as a result of the Trust Fund (or 80 megatonnes for the 2008–2012 duration of the program).

Given that the Trust Fund has no conditions that allow the federal government to monitor the provinces' results by requiring them to report to it on how they use the funds, Environment Canada has made a claim of expected results even though it is very unlikely that it will be able to report real, measurable, and verifiable results.

The government cannot demonstrate that environmental programs are achieving intended results

The test of any environmental law, regulation, program, or tool is whether it leads to either reductions in the rate of environmental degradation, and/or measurable improvements in environmental quality.

The findings in this report confirm that there are gaps in the information and verification needed for Parliament to know whether the programs we examined are working well or whether they should be

adjusted. For example, as noted in Chapter 2 of this report, Managing Severe Weather Warnings, Environment Canada reports that it issues over 10,000 warnings every year, providing an important service to protect Canadians from a range of events from tornadoes and severe thunderstorms to freezing rain and heavy snowfalls. With climate change expected to increase the severity and frequency of extreme weather events in the years ahead, the delivery of severe weather warning services will be increasingly important.

Environment Canada's Meteorological Service is considered among the world leaders in providing severe weather warning services. However, there is no national system for verifying the accuracy of severe weather warnings. Such a system would help Environment Canada understand how good a job it is doing and where improvements are needed. A national system would also tell the Department how well the current warnings are understood and heeded by Canadians, and where future improvements in the delivery of severe weather warnings may be needed.

Chapter 3, Managing Environmental Programming, notes that Agriculture and Agri-Food Canada has spent about \$370 million to protect environmental quality on farms by addressing issues such as the handling of agricultural waste and restriction of livestock from waterways. Producers are informed of environmental issues and partially reimbursed for adopting management practices that are beneficial to the environment. However, Agriculture and Agri-Food Canada lacks sufficient data to determine the extent to which action at the farm level has resulted in positive environmental change.

In the areas we examined for this report, a key challenge for government is to know if its programs are succeeding in improving environmental quality. This requires the ongoing monitoring of environmental quality, and assurance that environmental laws, standards, and regulations are being implemented and enforced effectively. Government should clearly define for Parliament its management targets that measure progress against either improved environmental quality or reduced risks to the environment through lower pollution emissions. Measuring the extent to which federal laws, programs, and initiatives are actually working to protect Canadians from environmental degradation remains a significant management challenge. Trying to manage the environment without a coherent measurement system is like trying to guide Canada's economy in the absence of indicators like the gross domestic product, inflation, interest rates, and unemployment data.

Sustainable development: Directions and strategies

Since the idea of sustainable development emerged in the 1980s, translating its goals into concrete practice has eluded us. Its appearance in policy and legislation and its apparent acceptance in theory are at odds with operational reality.

Nowhere is this weakness more apparent than in the federal government's past sustainable development strategies. The promise of these strategies was that the requirement to have them tabled in Parliament would motivate departments to take environmental issues into account, along with social and economic issues, when making management decisions.

It is clear that the strategies produced since 1997 have not realized their potential to promote sustainable development in Canada. Indeed, the Office of the Auditor General has underscored the failure of these strategies to drive more sustainable development. Successive commissioners have reiterated that the strategies are underperforming and need fixing. This year's report is no exception. Given the findings and recommendation in the Commissioner's 2007 Report on the strategies, and pending the implementation of that recommendation and the new *Federal Sustainable Development Act*, we carried out only minimal monitoring work on the strategies this year.

Federal Sustainable Development Act. Parliament has recognized the fault lines of the current system, passing the new Federal Sustainable Development Act in June 2008. The new Act holds promise to correct the current flaws by requiring for the first time an overarching federal strategy for sustainable development. The strategy is to be completed in 2010 or earlier under the leadership of Environment Canada. Departments' and agencies' sustainable development strategies must now have plans and objectives in place that comply with and contribute to the Federal Sustainable Development Strategy.

The Act sets out concrete operational parameters for sustainable development, drawing on the precautionary principle that where there are threats of serious or irreversible damage, a lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. The Act also establishes the need to integrate environmental, economic, and social factors into all decisions made by the government. The Act calls for a federal strategy that includes measurable targets and that identifies the ministers responsible for meeting each target.

The 2008 Federal Sustainable Development Act also sets out obligations for the Commissioner. These include a requirement to review and comment on the draft federal strategy to ensure that its targets can be measured and its implementation strategies assessed, and a requirement to assess the fairness of the information reported by the government on its progress in implementing the federal strategy and meeting its targets.

The way forward

Shortly before my arrival at the Office, the Auditor General convened a Green Ribbon Panel to examine how the Office's environment and sustainable development mandate established in 1995 had been put into practice, and to identify any potential opportunities to serve Parliament better. The Green Ribbon Panel made a number of valuable recommendations. The Auditor General and I are committed to developing a strategy and work plan to address those recommendations and the requirements of new legislation, as well as other important environmental and sustainable development issues facing the federal government.

I would like to thank my staff for their dedication and professionalism. I look forward to working with them to continue providing Parliament with independent and objective information that it can use in holding government to account for delivering on its environmental commitments.

Main Points—Chapters 1 to 5





Managing Air Emissions

Chapter 1

Main Points

What we examined

Air emissions are the release into the atmosphere of pollutants, many of which have global effects such as greenhouse gases. The sources of air emissions range from industry, electric power generation, and transportation to agricultural production and individual households.

To manage and control air emissions, the federal government uses a "menu" or "tool box" of approaches. We looked at examples of four types of tools and assessed whether the government knows what results the tools have achieved or are expected to achieve.

We examined a Pollution Prevention Plan implemented under the Canadian Environmental Protection Act, 1999 (CEPA 1999) to manage acrylonitrile, a substance used to manufacture synthetic rubber and other products. We examined how Environment Canada manages regulations governing gasoline and diesel fuel content, as well as regulations that limit the flow of gasoline during refuelling of vehicles at the pump. We also looked at the Clean Air and Climate Change Trust Fund and the Public Transit Tax Credit, two economic measures intended to reduce greenhouse gas emissions. Both were included in the government's Climate Change Plan, issued in response to the Kyoto Protocol Implementation Act. Finally, we examined three of the federal government's voluntary agreements with industry associations, which were intended to reduce emissions that contribute to smog and climate change.

Why it's important

Besides contributing to smog and climate change, air emissions have harmful health effects such as asthma, lung irritation, and cardiovascular disease; individuals who are young, sick, or elderly are particularly vulnerable. Benzene, a component of gasoline, is a known carcinogen that may lead to cancers such as leukemia. Acrylonitrile is also a known carcinogen, unsafe at any level of exposure. Both substances have been designated as toxic substances by Environment Canada and Health Canada under various iterations of the Canadian Environmental Protection Act.

The federal government has entered into international agreements and national initiatives to combat air emissions—examples are the Kyoto Protocol and the Canada-US Air Quality Agreement at the international level and, at the national level, *Turning the Corner* (a plan to regulate greenhouse gas emissions and air pollutants). Key elements of both the Kyoto Protocol and *Turning the Corner* are the commitment to "real, measurable, and verifiable results."

What we found

- The federal government cannot demonstrate that the results it has reported for the policy tools we examined have actually been achieved or that processes are in place to verify the results reported by the private sector.
- Environment Canada has indicated that the Pollution Prevention Plan Notice it published in 2003 for acrylonitrile (requiring a company that was using the substance to implement a plan for reducing emissions) has been successful, based on the results reported by the company. The Department did not validate the results. Furthermore, no other emitters of acrylonitrile were subject to the Notice. Total air emissions of acrylonitrile saw a rapid increase from 2003 to 2006. While activities by Environment Canada contributed to a reduction in emissions between 2006 and 2007, total national emissions are still almost three times higher than in 2000 when the substance was declared toxic.
- Environment Canada states that compliance with the regulations limiting the content of benzene in gasoline and of sulphur in diesel fuel is high. However, it has not assessed whether its enforcement approach is sufficient to support this assertion. In comparison, it has carried out almost no enforcement of a third regulation, the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations, governing the release of carcinogenic benzene and other volatile substances into the air at gas pumps across Canada. As a consequence, it does not know whether this regulation is achieving results.
- Environment Canada lowered its initial estimate of annual reductions in greenhouse gas emissions from 220,000 tonnes to about 35,000 tonnes expected as a result of the Public Transit Tax Credit—a reduction that will have a negligible impact on Canada's greenhouse gas emissions, despite the \$635 million reported in the 2007 Budget as the cost of the Tax Credit.
- Environment Canada used flawed analyses to establish the 80-megatonne reduction in greenhouse gas emissions it expects from 2008 to 2012 as a result of the Clean Air and Climate Change Trust Fund (\$1.519 billion in federal funds transferred to

the provinces and territories). Further, although the 80 megatonnes are included as part of the total reductions the federal Climate Change Plan will achieve, the Trust Fund has no conditions that allow the federal government to monitor the provinces' results by requiring the provinces to report to it on how they use the funds. Therefore, it is very unlikely that Environment Canada will be able to report real, measurable, and verifiable results.

• The three voluntary agreements we assessed meet many of the general expectations for what a voluntary agreement should include. However, the government has not completed the key step of verifying the results reported by the private sector.

The Department has responded. The Department agrees with all of our recommendations. Its detailed responses follow each recommendation throughout the chapter.



Managing Severe Weather Warnings Environment Canada

Chapter 2 Main Points

What we examined

Environment Canada is Canada's primary source of weather information. Its weather services are delivered not through a single unit within the Department but through a variety of departmental activities, overseen by a committee of senior managers—the Weather and Environmental Services Board (WESB). In the 2006–07 fiscal year, spending on weather and environmental services accounted for around \$340 million, or about one third of Environment Canada's annual budget.

Environment Canada reports that it issues over 10,000 severe weather warnings, watches, and statements every year. We examined whether the Department's systems and procedures adequately support the delivery of timely and accurate severe weather warnings to Canadians, now and in the future. We looked at Environment Canada's management of its weather observation network, the implementation of a new, advanced forecaster workstation called NinJo, and the delivery and verification of severe weather warnings. We also examined the Department's planning process that supports the delivery of severe weather warnings. We did not examine Environment Canada's public forecasting program or other weather and environmental services such as those related to air quality, climate, or hydrometric services.

Why it's important

Severe weather such as tornadoes, severe thunderstorms, heavy snowfalls, and freezing rain can result in property damage, crop damage, injuries, and loss of life. Severe weather can affect many sectors of the Canadian economy from transportation, to tourism, to agriculture.

The Intergovernmental Panel on Climate Change predicts that Canadians can expect more severe weather events as a result of climate change. Timely and accurate warnings of severe weather can allow Canadians to take appropriate action. For example, a high heat and humidex advisory can trigger media announcements about ways to beat the heat, help ensure that socially isolated individuals and other vulnerable groups are reached, and lead to the opening of public cooling centres.

What we found

- Although there has been some ad hoc verification in most regions,
 Environment Canada does not have a national program or approach
 to verify the timeliness, accuracy, or effectiveness of its severe
 weather warnings. This type of information would allow the
 Department to know how good a job it is doing across Canada,
 whether current performance is reasonable, and where it needs to
 make improvements to its services. Such information would also
 assist it in making sound investment decisions.
- The Department relies on a number of means to issue severe weather warnings to Canadians, including the Internet and the media. Despite its efforts, there is no national system in place that automatically warns the public about severe weather events or other emergencies. Such a system would communicate warnings over all radio and television stations and through mobile devices such as cellular phones. Weatheradio is Environment Canada's only tool that automatically alerts the public of severe weather warnings, but national public surveys indicate that the public's use of Weatheradio is low.
- Environment Canada has not adequately managed its weather observation networks, including radar and surface stations, to ensure that it can continue to provide the necessary data to issue and verify severe weather warnings. Environment Canada does not have the information on the performance of its assets—for example, trends in repair costs and failure rates during severe weather events—that it needs to make investment decisions over the life cycle of the assets. Investment decisions include whether to repair equipment or replace it.
- The Department is facing many significant challenges—such as implementing a robust and useful system to verify severe weather warnings, managing its monitoring networks over their life cycle with limited resources, and addressing the risks related to the Department's current strategy of relying on partners. It does not have an up-to-date long-term strategy for meeting those challenges and ensuring that it can continue to deliver timely and accurate severe weather warnings in the future.

The Department has responded. The Department agrees with all of our recommendations. Its detailed responses follow each recommendation throughout the chapter.



Managing Environmental Programming

Agriculture and Agri-Food Canada

Chapter 3 Main Points

What we examined

The Agricultural Policy Framework (APF) is a federal-provincial/territorial agreement that came into effect in 2003 to create a national approach to agriculture, with programming aimed at five areas ("chapters"): Business Risk Management, Food Safety and Quality, Science and Innovation, Environment, and Renewal. Although the agreement did not extend beyond 31 March 2008, agriculture ministers of the federal, provincial, and territorial governments agreed to continue existing programs for another year while new programs are developed under Growing Forward, which will replace the Agricultural Policy Framework.

Our audit examined whether Agriculture and Agri-Food Canada has managed the Environment Chapter of the Agricultural Policy Framework appropriately to achieve its objectives for environmentally sustainable agriculture. We also examined its reporting on the performance of the Environment Chapter. We looked at the development of the National Land and Water Information Service (NLWIS), a major information technology project that is important to the support of all programs within the Environment Chapter. Finally, we examined whether the Department used the lessons learned from the Agricultural Policy Framework in developing Growing Forward.

Why it's important

Canada's agri-food sector accounts for eight percent of the gross domestic product and generates \$130 billion in sales, including \$31 billion in exports. The sector employs one in eight Canadians and contributes to the economic base of many rural communities in Canada. The long-term prosperity of the agriculture industry depends on its ability to co-exist sustainably with the natural environment. However, agriculture has changed significantly in response to market demands, new production technologies, and larger, more intensive operations.

Recent studies show that stresses on the environment from agriculture have been increasing. At the same time, public awareness and concern about these effects is growing. Programs within the Environment Chapter of the Agricultural Policy Framework provide farmers with

access to information and resources in order to help them adopt farm management practices that benefit the environment.

What we found

- The Department does not know to what extent its environmental programs have improved the environment. Departmental reporting is limited because it does not monitor and report on program results beyond outputs, such as the number of completed water projects (for example, wells and pipelines). As a result, senior management cannot be certain whether programs are achieving their intended results and where improvements are needed. The Department has spent about \$370 million on environmental projects, but lacks sufficient data to demonstrate that action at the farm level has led to positive environmental change. In addition, agri-environmental targets in agreements with the provinces could not be measured by the planned end of the Agricultural Policy Framework, in March 2008, as the Department intended. Nevertheless, the beneficial management practices funded under AAFC's environment programs—for example, providing water sources for cattle away from streams—are supported by science, indicating that they will likely lead to positive environmental change. The Department is in the process of developing a modelling system to better understand the effects of its programs on the environment.
- The Department's allocation of operating resources among the Environment Chapter's contribution programs was not supported by adequate information. Nor could the Department provide us with complete information on the operating costs of each program. In addition, information the Department required delivery agents to submit was not consistent with the terms in the signed agreements. Nor was it clear how the Department used the information it did receive. As a result of slow progress in fixing problems in data from delivery agents, the Department prepared a disclaimer on the usability of the data—the primary source for reporting on the performance of its environment programs—until the data problems are fixed. Recently, the Department voluntarily joined a government initiative to improve program delivery that includes a plan to develop revised agreements and simplify program administration.
- The development of the National Land and Water Information Service (NLWIS) was poorly managed. This \$100-million, major Crown project fell behind schedule and had to be revised from original plans. Key decision makers and the Department's senior management were not involved to the degree expected for a project of this complexity. Participants had differing views of the project's goals. In addition, project management suffered from a lack of

- expertise and continuity; roles and responsibilities were unclear; and project requirements were changed without appropriate approvals. Senior management approved an internal audit and an independent review of NLWIS. During our audit, steps were being taken to address problems identified by the audit and review.
- In preparing for the next generation of the APF, the Department carried out formal "lessons learned" reviews. It also consulted extensively with stakeholders, who provided valuable information for Growing Forward. In developing the APF, the Department had experienced serious delays in negotiating and signing agreements with the provinces and territories. Based on that experience, the Department should have anticipated that negotiation and consultation would take longer than expected for Growing Forward and to plan accordingly. When the APF was to end on 31 March 2008, the APF environment programs were extended for up to one year, in order to provide more time for the development of Growing Forward.

The Department has responded. The Department agrees with all of our recommendations. Its detailed responses follow each recommendation throughout the chapter.

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Annual Report on Sustainable Development Strategies

Chapter 4

Main Points

What we examined

In a 1995 amendment to the Auditor General Act, Parliament created a requirement for federal departments to prepare sustainable development strategies, table them in Parliament, and update them every three years. The process of creating the strategies was intended to ensure that government departments and agencies would examine their policies and programs to identify their potential social, economic, and environmental consequences. The strategies were to set out opportunities for more sustainable development in concrete action plans.

Over the past decade, we frequently reported significant weaknesses in the quality and relevance of the commitments presented in the sustainable development strategies. Last year in our 10th annual report on the strategies, we concluded that the government's current approach to producing and using sustainable development strategies was not working to deliver progress toward sustainable development. The government agreed with our recommendation that it review its approach to clarify its expectations and revitalize the process. It committed to completing a review by the end of October 2008.

Pending the outcome of the government's review and in accordance with our legal obligation to monitor and report annually on the strategies, we examined the implementation of one commitment each from the 2007–2009 strategies of 11 federal organizations. Given our findings regarding the quality and significance of sustainable development strategy commitments over the past decade, we did not carry out additional work this year to determine whether the commitments we examined were based on an examination of good practices elsewhere or on an assessment of the social, economic, and environmental impact of each department's key policies and programs. Consequently, we do not comment on the significance or relevance of the commitments we examined this year.

Why it's important

Through their policies, programs, and regulations, and the billions of dollars they spend each year, federal departments and agencies have a significant influence on just about every aspect of Canadian society.

In establishing its expectations for sustainable development strategies, the government recognized that Canada's economic health depends on its environmental health. It indicated that the strategies would help shape a better future for all Canadians.

What we found

- Eight of the eleven organizations in our audit had integrated structures and processes to effectively plan, implement, and monitor the selected commitment and could demonstrate some achieved results.
- Some of the commitments we examined on greening operations were related to the government-wide targets established by the federal Office of Greening Government Operations. Although we did not re-audit the Office of Greening Government Operations, we found in our work last year that the government-wide targets in this area were not specific and that the government was not in a position to know what progress it was making in greening its operations.



Annual Report on Environmental Petitions

Chapter 5 Main Points

What we examined

Established in 1995 as a result of amendments to the Auditor General Act, the environmental petitions process provides Canadians with a formal means to bring their concerns about environmental issues to the attention of federal ministers and departments and to obtain a response to their concerns. Ministers are required to respond in writing within 120 days. On behalf of the Auditor General of Canada, the Commissioner of the Environment and Sustainable Development manages the environmental petitions process and monitors responses of federal ministers. As required by the Act, the Commissioner reports annually on the quantity, nature, and status of petitions received and on the timeliness of departmental responses. This chapter contains this year's annual report on petitions.

Why it's important

Environmental petitions are a simple, unique feature of our parliamentary democracy. Submitting a petition is a way for Canadians to bring their environmental concerns to the attention of federal departments and agencies that are subject to the process. Monitoring and reporting on petitions and petition responses, as well as publishing those documents on our website, contributes to transparency in federal environmental management. The Office of the Auditor General also helps to promote federal accountability for environmental management by considering the issues raised in petitions and the responses they generate when it plans and conducts audits.

What we found

- This year, we received 56 petitions—a 24 percent increase over last year. While petitions were submitted from petitioners residing in seven provinces and one territory, Ontario accounted for more than half of the petitions received.
- Human and environmental health, environmental assessments, and
 water are the top issues raised in petitions this year. More than half
 of the petitions were grouped around a number of specific issues,
 with the largest group concerning the effects of exposure to
 electromagnetic radiation, which we highlighted as an emerging
 issue in last year's annual report.

- A number of issues raised in petitions have been of interest to members of Parliament. Issues raised by petitioners have also received media coverage in the past year, ranging from newspaper articles to television documentaries and radio interviews
- The 200 responses requested from departments and agencies this year represented a significant increase over last year. Environment Canada continues to account for the largest number. The proportion of responses provided within the required 120 days decreased overall, from 95 percent last year to 86 percent this year. Two departments, Environment Canada and Indian and Northern Affairs Canada, accounted for more than 70 percent of the late responses, while Fisheries and Oceans Canada and Industry Canada improved the timeliness of their responses this year.

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Appendix



Appendix Auditor General Act—Excerpts

An Act respecting the Office of the Auditor General of Canada and sustainable development monitoring and reporting

INTERPRETATION

Definitions

2. In this Act,

"appropriate Minister"

"appropriate Minister" has the meaning assigned by section 2 of the *Financial Administration Act*:

"category I department"

"category I department" means

- (a) any department named in Schedule I to the Financial Administration Act,
- (b) any department in respect of which a direction has been made under subsection 11(3) of the Federal Sustainable Development Act; and
- (c) any agency set out in the schedule to the Federal Sustainable Development Act.

"Commissioner"

"Commissioner" means the Commissioner of the Environment and Sustainable Development appointed under subsection 15.1(1);

"sustainable development"

"sustainable development" means development that meets the needs of the present without compromising the ability of future generations to meet their own needs;

POWERS AND DUTIES

Examination

5. The Auditor General is the auditor of the accounts of Canada, including those relating to the Consolidated Revenue Fund and as such shall make such examinations and inquiries as he considers necessary to enable him to report as required by this Act.

Annual and additional reports to the House of Commons

7. (1) The Auditor General shall report annually to the House of Commons and may make, in addition to any special report made under subsection 8(1) or 19(2) and the Commissioner's report under subsection 23(2), not more than three additional reports in any year to the House of Commons

- (a) on the work of his office; and,
- (b) on whether, in carrying on the work of his office, he received all the information and explanations he required.

Idem

- (2) Each report of the Auditor General under subsection (1) shall call attention to anything that he considers to be of significance and of a nature that should be brought to the attention of the House of Commons, including any cases in which he has observed that
 - (a) accounts have not been faithfully and properly maintained or public money has not been fully accounted for or paid, where so required by law, into the Consolidated Revenue Fund;
 - (b) essential records have not been maintained or the rules and procedures applied have been insufficient to safeguard and control public property, to secure an effective check on the assessment, collection and proper allocation of the revenue and to ensure that expenditures have been made only as authorized;
 - (c) money has been expended other than for purposes for which it was appropriated by Parliament;
 - (d) money has been expended without due regard to economy or efficiency;
 - (e) satisfactory procedures have not been established to measure and report the effectiveness of programs, where such procedures could appropriately and reasonably be implemented; or
 - (f) money has been expended without due regard to the environmental effects of those expenditures in the context of sustainable development.

STAFF OF THE AUDITOR GENERAL

Appointment of Commissioner

15.1 (1) The Auditor General shall, in accordance with the *Public Service Employment* Act, appoint a senior officer to be called the Commissioner of the Environment and Sustainable Development who shall report directly to the Auditor General.

Commissioner's duties

(2) The Commissioner shall assist the Auditor General in performing the duties of the Auditor General set out in this Act that relate to the environment and sustainable development.

SUSTAINABLE DEVELOPMENT

Purpose

- 21.1 In addition to carrying out the functions referred to in subsections 23(3) and (4), the purpose of the Commissioner is to provide sustainable development monitoring and reporting on the progress of category I departments towards sustainable development, which is a continually evolving concept based on the integration of social, economic and environmental concerns, and which may be achieved by, among other things,
 - (a) the integration of the environment and the economy;
 - (b) protecting the health of Canadians;
 - (c) protecting ecosystems;
 - (d) meeting international obligations;

- (e) promoting equity;
- (f) an integrated approach to planning and making decisions that takes into account the environmental and natural resource costs of different economic options and the economic costs of different environmental and natural resource options;
- (g) preventing pollution; and
- (h) respect for nature and the needs of future generations.

Petitions received

22. (1) Where the Auditor General receives a petition in writing from a resident of Canada about an environmental matter in the context of sustainable development that is the responsibility of a category I department, the Auditor General shall make a record of the petition and forward the petition within fifteen days after the day on which it is received to the appropriate Minister for the department.

Acknowledgement to be sent

(2) Within fifteen days after the day on which the Minister receives the petition from the Auditor General, the Minister shall send to the person who made the petition an acknowledgement of receipt of the petition and shall send a copy of the acknowledgement to the Auditor General.

Minister to respond

- (3) The Minister shall consider the petition and send to the person who made it a reply that responds to it, and shall send a copy of the reply to the Auditor General, within
- (a) one hundred and twenty days after the day on which the Minister receives the petition from the Auditor General; or
- (b) any longer time, where the Minister personally, within those one hundred and twenty days, notifies the person who made the petition that it is not possible to reply within those one hundred and twenty days and sends a copy of that notification to the Auditor General.

Multiple petitioners

(4) Where the petition is from more than one person, it is sufficient for the Minister to send the acknowledgement and reply, and the notification, if any, to one or more of the petitioners rather than to all of them.

Duty to monitor

- **23.** (1) The Commissioner shall make any examinations and inquiries that the Commissioner considers necessary in order to monitor
 - (a) the extent to which category I departments have contributed to meeting the targets set out in the Federal Sustainable Development Strategy and have met the objectives, and implemented the plans, set out in their own sustainable development strategies laid before the House of Commons under section 11 of the Federal Sustainable Development Act; and
 - (b) the replies by Ministers required by subsection 22(3).

Commissioner's report

- (2) The Commissioner shall, on behalf of the Auditor General, report annually to the House of Commons concerning anything that the Commissioner considers should be brought to the attention of that House in relation to environmental and other aspects of sustainable development, including
 - (a) the extent to which category I departments have contributed to meeting the targets set out in the Federal Sustainable Development Strategy and have met the objectives, and implemented the plans, set out in their own sustainable development strategies laid before that House under section 11 of the Federal Sustainable Development Act;
 - (b) the number of petitions recorded as required by subsection 22(1), the subject-matter of the petitions and their status; and
 - (c) the exercising of the authority of the Governor in Council under subsections 11(3) and (4) of the Federal Sustainable Development Act.

Duty to examine

(3) The Commissioner shall examine the report required under subsection 7(2) of the Federal Sustainable Development Act in order to assess the fairness of the information contained in the report with respect to the progress of the federal government in implementing the Federal Sustainable Development Strategy and meeting its targets.

Duty to report

(4) The Commissioner shall include in the report referred to in subsection (2) the results of any assessment conducted under subsection (3) since the last report was laid before the House of Commons under subsection (5).

Submission and tabling of report

(5) The report required by subsection (2) shall be submitted to the Speaker of the House of Commons and shall be laid before that House by the Speaker on any of the next 15 days on which that House is sitting after the Speaker receives it.

Report of the Commissioner of the Environment and Sustainable Development to the House of Commons—December 2008

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Report of the Commissioner of the **Environment** and Sustainable Development

DECEMBER

Chapter 1 **Managing Air Emissions**

to the House of Commons



Office of the Auditor General of Canada



2008





Report of the

Commissioner of the Environment and Sustainable Development

to the House of Commons

DECEMBER

Chapter 1Managing Air Emissions



Office of the Auditor General of Canada

The December 2008 Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 5, Appendices, and five chapters. The main table of contents for the Report is found at the end of this publication.

The Report is available on our website at www.oag-bvg.gc.ca.

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Chapter
Managing Air Emi

Managing Air Emissions

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Managing Air Emissions

Main Points

What we examined

Air emissions are the release into the atmosphere of pollutants, many of which have global effects such as greenhouse gases. The sources of air emissions range from industry, electric power generation, and transportation to agricultural production and individual households.

To manage and control air emissions, the federal government uses a "menu" or "tool box" of approaches. We looked at examples of four types of tools and assessed whether the government knows what results the tools have achieved or are expected to achieve.

We examined a Pollution Prevention Plan implemented under the Canadian Environmental Protection Act, 1999 (CEPA 1999) to manage acrylonitrile, a substance used to manufacture synthetic rubber and other products. We examined how Environment Canada manages regulations governing gasoline and diesel fuel content, as well as regulations that limit the flow of gasoline during refuelling of vehicles at the pump. We also looked at the Clean Air and Climate Change Trust Fund and the Public Transit Tax Credit, two economic measures intended to reduce greenhouse gas emissions. Both were included in the government's Climate Change Plan, issued in response to the Kyoto Protocol Implementation Act. Finally, we examined three of the federal government's voluntary agreements with industry associations, which were intended to reduce emissions that contribute to smog and climate change.

Why it's important

Besides contributing to smog and climate change, air emissions have harmful health effects such as asthma, lung irritation, and cardiovascular disease; individuals who are young, sick, or elderly are particularly vulnerable. Benzene, a component of gasoline, is a known carcinogen that may lead to cancers such as leukemia. Acrylonitrile is also a known carcinogen, unsafe at any level of exposure. Both substances have been designated as toxic substances by Environment Canada and Health Canada under various iterations of the Canadian Environmental Protection Act.

The federal government has entered into international agreements and national initiatives to combat air emissions—examples are the Kyoto Protocol and the Canada-US Air Quality Agreement at the international level and, at the national level, *Turning the Corner* (a plan to regulate greenhouse gas emissions and air pollutants). Key elements of both the Kyoto Protocol and *Turning the Corner* are the commitment to "real, measurable, and verifiable results."

What we found

- The federal government cannot demonstrate that the results it
 has reported for the policy tools we examined have actually been
 achieved or that processes are in place to verify the results reported
 by the private sector.
- Environment Canada has indicated that the Pollution Prevention Plan Notice it published in 2003 for acrylonitrile (requiring a company that was using the substance to implement a plan for reducing emissions) has been successful, based on the results reported by the company. The Department did not validate the results. Furthermore, no other emitters of acrylonitrile were subject to the Notice. Total air emissions of acrylonitrile saw a rapid increase from 2003 to 2006. While activities by Environment Canada contributed to a reduction in emissions between 2006 and 2007, total national emissions are still almost three times higher than in 2000 when the substance was declared toxic.
- Environment Canada states that compliance with the regulations limiting the content of benzene in gasoline and of sulphur in diesel fuel is high. However, it has not assessed whether its enforcement approach is sufficient to support this assertion. In comparison, it has carried out almost no enforcement of a third regulation, the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations, governing the release of carcinogenic benzene and other volatile substances into the air at gas pumps across Canada. As a consequence, it does not know whether this regulation is achieving results.
- Environment Canada lowered its initial estimate of annual reductions in greenhouse gas emissions from 220,000 tonnes to about 35,000 tonnes expected as a result of the Public Transit Tax Credit—a reduction that will have a negligible impact on Canada's greenhouse gas emissions, despite the \$635 million reported in the 2007 Budget as the cost of the Tax Credit.
- Environment Canada used flawed analyses to establish the 80-megatonne reduction in greenhouse gas emissions it expects from 2008 to 2012 as a result of the Clean Air and Climate Change Trust Fund (\$1.519 billion in federal funds transferred to

the provinces and territories). Further, although the 80 megatonnes are included as part of the total reductions the federal Climate Change Plan will achieve, the Trust Fund has no conditions that allow the federal government to monitor the provinces' results by requiring the provinces to report to it on how they use the funds. Therefore, it is very unlikely that Environment Canada will be able to report real, measurable, and verifiable results.

• The three voluntary agreements we assessed meet many of the general expectations for what a voluntary agreement should include. However, the government has not completed the key step of verifying the results reported by the private sector.

The Department has responded. The Department agrees with all of our recommendations. Its detailed responses follow each recommendation throughout the chapter.





Power generation at facilities like this thermal power plant is a major source of greenhouse gas emissions in Canada.

Photo: Bastiaan Kalt

Smog—A haze in the air consisting of gases and particles. It forms when natural and human sources release pollutants into the lower atmosphere. The largest sources of pollutants are the burning of fossil fuels for transportation, power generation, industry, and heating and cooling. The two primary pollutants in smog are between nitrogen oxides and volatile organic compounds in the atmosphere in the presence of sunlight. Particulate matter is a collection of airborne particles in solid or liquid form. Some examples are smoke and ash from burning wood. Other components of smog include sulphur dioxide, volatile organic compounds, and carbon monoxide.

Criteria air contaminants—A group of air pollutants that cause smog, acid rain, and other forms of air pollution. They occur mostly when include sulphur oxides, nitrogen oxides, volatile organic compounds, carbon monoxide,

Volatile organic compounds—Volatile organic compounds such as benzene are key causes of atmosphere, which are the main ingredients of

Introduction

Air quality is important to the health of Canadians and the environment

- Air quality has a direct influence on our health and the environment. Poor air quality has been linked to asthma, lung cancer, cardiovascular disease, and allergies. Sick and elderly people and young children are particularly vulnerable to air pollution. Poor air quality has a negative impact on the environment, including forests and other ecosystems. Environment Canada has stated that poor air quality causes heavy economic costs, with billions of dollars spent on health care and environmental remediation.
- Air pollution problems such as smog are caused by the emission of pollutants into the atmosphere. Air pollutants include criteria air contaminants (nitrogen oxides, volatile organic compounds, sulphur oxides, carbon monoxide, particulate matter, and ammonia), as well as toxic substances such as benzene and acrylonitrile. The main sources of air pollutants are transportation, power generation, industry, and heating and cooling.
- Another class of atmospheric emissions consists of greenhouse gases, including carbon dioxide, methane, and nitrous oxide. They play a key role in climate change—that is, the long-term shift in the global climate. Canadians are among the world's highest emitters of greenhouse gases per capita. The main sources of emissions are power generation, transportation, and industrial processes. According to the Intergovernmental Panel on Climate Change, climate change is likely to increase the frequency of severe weather events such as droughts, floods, and storms.
- The federal government has stated that it is committed to acting on air pollution and greenhouse gas emissions to improve Canadians' health and the environment. It has committed itself to national initiatives (such as Turning the Corner) and international agreements (such as the Canada-United States Air Quality Agreement and the Kyoto Protocol) to achieve this goal. At the federal level, Environment Canada has responsibility for air pollution matters, while the departments of Health, Transport, Natural Resources, and others play important roles. Environment Canada and other departments protect Canadians' health and the environment through such means as regulations, guidelines, codes of practice, economic instruments, voluntary agreements, and pollution prevention plans.



Industry is a major source of volatile organic compound emissions in Canada.

Focus of the audit

- Our audit sought to determine whether the responsible departments of the Government of Canada know if selected policy tools that are key to controlling air emissions are achieving results. The audit assessed each selected tool individually. We did not compare the different tools.
- 1.6 We examined four types of policy tools for the audit:
 - pollution prevention plans, specifically, the Notice for Pollution Prevention Plans in Respect of Acrylonitrile;
 - fuels regulations, specifically, the Benzene in Gasoline Regulations, Sulphur in Diesel Fuel Regulations, and Gasoline and Gasoline Blend Dispensing Flow Rate Regulations;
 - economic measures, specifically, the Clean Air and Climate Change Trust Fund and the Public Transit Tax Credit; and
 - voluntary agreements with industry, specifically, the Railway Association of Canada, Canadian Chemical Producers' Association, and Air Transport Association of Canada.
- More details on the audit objectives, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendations

Pollution prevention plans

Pollution prevention plan—A systematic and

Acrylonitrile—A substance used to

- 1.8 Under the Canadian Environmental Protection Act, 1999 (CEPA 1999), the Minister of the Environment can publish in the Canada Gazette a notice requiring persons to prepare and implement a pollution prevention plan to manage toxic substances identified under CEPA 1999. To date, eight notices for pollution prevention plans have been published in the Canada Gazette. Five of the notices concern air emissions. The first notice was published in 2003 and addressed releases of acrylonitrile associated with the manufacturing of synthetic rubber.
- A person or company subject to a notice must prepare and implement a pollution prevention plan and file specified documents by the dates prescribed, reporting the actions taken and the results achieved from implementation of the plan. However, the party is not legally bound to meet the notice's targets. According to Environment Canada, its officials
 - inform all those affected by the notice of their obligations;

- review plan documents to ensure they are complete and reasonable;
- contact the party to request that it clarify or amend information, if necessary;
- · conduct site visits, if warranted; and
- take enforcement action, if warranted.

According to Environment Canada, pollution prevention plans have never been identified as a priority for enforcement by the Department, as such, enforcement activities have been reactive in terms of following up on late or missing reports. Environment Canada has conducted few on-site inspections to ensure that parties have implemented their pollution prevention plans.

1.10 For this audit, we examined Environment Canada's processes relating to reviewing and reporting on the *Notice Requiring the Preparation and Implementation of Pollution Prevention Plans in Respect of Acrylonitrile*, published in the *Canada Gazette* in May 2003. We expected Environment Canada to have measured and verified the results achieved through the implementation of this notice.

No final independent assessment was conducted on the plan's results

- 1.11 The May 2003 notice published in the Canada Gazette concerned a company that was producing synthetic rubber through a manufacturing process that used acrylonitrile and released the substance into the environment. The notice required the company to prepare and implement a pollution prevention plan that would reduce acrylonitrile releases to the lowest possible levels by December 2005. Environment Canada's risk management strategy indicated that a single facility was responsible for the bulk of acrylonitrile air emissions in Canada. The notice specifically targeted this facility.
- 1.12 The original risk management strategy did not take into account how emissions from other sources should be addressed and pollution prevented. According to Environment Canada's National Pollutant Release Inventory, total air emissions of acrylonitrile saw a rapid increase from 2003 to 2006. Efforts by Environment Canada over the past few years to work with the sources of increased air emissions have reversed the upward trend by almost 50 percent in 2006–07. Nonetheless, the total acrylonitrile emissions in 2007 were still about three times higher than they were when the substance was first declared toxic under CEPA 1999 and 8.5 tonnes higher than when the Notice was published in 2003 (Exhibit 1.1).

National Pollutant Release Inventory— A publicly accessible Canadian database containing information on annual on-site releases of specific substances to the air, water, and land, as well as disposals and off-site transfers for recycling that originate from industrial and institutional sources. The Inventory is managed by Environment Canada and currently tracks 367 substances and groups of substances.

Tonnes 35 -30 -20 2001 2002 2003 Year

Exhibit 1.1 Acrylonitrile air emissions in Canada have increased overall but show recent reductions

Source: Environment Canada

Recommendation. Environment Canada should review and revise its risk management strategy for acrylonitrile and ensure control measures are in place to deal with significant sources.

The Department's response. Environment Canada accepts this recommendation. Under Canada's 2006 Chemical Management Plan (CMP), 4,300 substances have been identified as posing a potential risk to human health and the environment. Five hundred of these substances are deemed to be of the highest priority. Given the significance of this challenge, it is essential to devote resources to management activities in a manner commensurate with the risks involved.

Acrylonitrile, a substance emitted in the gaseous form from plastic industry facilities, would have been part of the highest priority group if early risk management actions had not been taken in 2003. Risk management instruments have been put in place to cover the two facilities that have been responsible for over 99 percent of acrylonitrile emissions.

In early 2000, when Environment Canada developed the chemical management program, now known as the CMP, various Canadian Environmental Protection Act, 1999 science-based instruments were the risks to be managed. Pollution prevention plan notices are one such instrument, and are generally used in select situations where independent validation of data would not necessarily result in any

increased level of environmental protection. Environment Canada believes that it has fulfilled its intended role for the oversight of this instrument.

Furthermore, in Canada, jurisdiction over the environment is shared with provinces and territories. Therefore, interventions at the federal level with respect to particular pollutants have to be scientifically driven and of national concern. Otherwise, the best approach is to collaborate with the provinces/territories directly concerned by the issue.

In the case of the first plant, which was covered by the Acrylonitrile Pollution Prevention Plan Notice, it was necessary for the federal government to intervene, as the province had not yet developed its own standards. In the case of the second plant, where the provincial government was in a position to use its own tools to address the same issue, the federal government agreed to the use of the provincial instrument. In both situations, the environmental outcome is reduced atmospheric emissions of acrylonitrile to the lowest economically achievable levels.

As the CMP unfolds and lessons are learned from the numerous science-based interventions that are now being undertaken, the federal government will continue to refine its strategies for risk management. Relative to acrylonitrile, the 2002 Risk Management Strategy will be reviewed and updated based on current emissions from Canadian facilities with the objective of limiting releases from significant industrial sources to the lowest levels technically and economically achievable.

To achieve this intended outcome, the 2002 Risk Management Strategy update will incorporate consideration of the current emission profiles, best available technologies economically available and an examination of the existing controls at the provincial and federal levels.

The performance of the 2002 Risk Management Strategy will be measured through the achievement of any targeted reductions from significant sources of acrylonitrile emissions.

Environment Canada will undertake the implementation of the updated Risk Management Strategy by December 2009 and it will be carried out in collaboration and after consultation with other implicated parties and/or jurisdictional authorities.

- 1.14 Final independent assessment of plan results has not been undertaken. The single largest user of acrylonitrile in Canada when the notice was issued was Bayer Inc., which subsequently sold its facility to LANXESS Inc. The company reported that it had been reducing its acrylonitrile emissions for several years. According to Environment Canada, through implementation of its pollution prevention plan, the facility succeeded in reducing air emissions of acrylonitrile from 6.8 tonnes in 2003 to 3.2 tonnes in 2006 and eliminating transfers to other sites for incineration. The Department accepted the company's reports of success.
- 1.15 Environment Canada states that its knowledge of the industrial sector, its visits to the facility, desk reviews of industry reports, its public reporting requirements, and the penalties for false reporting provide the necessary assurance that the information supplied by the company is accurate. Environment Canada's August 2007 draft guide for risk managers on pollution prevention plans does not address how data reported by industry is to be assessed. Good management practices would have required one further step to demonstrate the success of the plan—the independent assessment of the accuracy of the final results. Environment Canada did not take this step and relied exclusively on the results reported by the facility.

Fuels regulations

Regulations—Measures that impose

- 1.16 At the federal level, the Canadian Environmental Protection Act, 1999 (CEPA 1999) protects Canadians' health and our environment by preventing and managing the health and environmental risks posed by toxic substances and other substances deemed to present a risk. Regulations are key tools in managing these risks. Of 43 regulations currently listed under CEPA 1999, 7 relate to fuels. Environment Canada is responsible for all of them.
- 1.17 Compliance with the regulations under CEPA 1999 is mandatory. Environment Canada is responsible for securing compliance through two main types of activity: compliance promotion and enforcement. Steps taken to promote compliance include providing annual information to the community being regulated, and responding to inquiries and requests. Enforcement activities include inspections to verify compliance; investigations of suspected violations; and measures to compel compliance, such as warnings, tickets, or environmental protection compliance orders. Environment Canada's annual plans to assess compliance with the regulations are based on national and regional priorities. These are identified through consultations involving the Department's compliance promotion staff, enforcement staff, headquarters, and regional offices.

10

- 1.18 For this audit we focused on three fuels regulations:
 - the Benzene in Gasoline Regulations;
 - the Sulphur in Diesel Fuel Regulations; and
 - the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations (referred to subsequently as the Flow Rate Regulations).
- 1.19 We expected that Environment Canada would have procedures in place enabling it to know whether requirements are being met concerning the content of fuels and the way fuels are dispensed. We also expected Environment Canada to publish reports about progress on compliance with the three regulations.

Environment Canada has not assessed overall implementation for the Benzene and Sulphur Regulations

- 6 November 1997. The objective of the regulations is to reduce emissions of benzene from gasoline-powered vehicles by setting limits on benzene content in gasoline (1.5 percent by volume at the service station pump and 1.0 percent by volume when supplied by producers or importers) and establishing a limit on other gasoline contents based on predicted tailpipe emissions. Regulated importers and producers must maintain records and submit regular reports to the Minister of the Environment. They can comply with the regulations using a yearly pool average or a flat per-litre assessment; in the first case, they must meet more administrative requirements.
- 1.21 The Sulphur in Diesel Fuel Regulations came into force on 1 January 2003. As of 1 June 2006, the regulations limited the sulphur content in diesel fuel for use in on-road vehicles to a maximum of 15 milligrams per kilogram. Changes in 2006 set limits for off-road, rail, and marine diesel fuel. The regulations require importers and producers of diesel fuel to maintain records and submit regular reports to the Minister of the Environment on diesel fuel volumes and sulphur content. A key purpose of the regulations is to ensure that the level of sulphur in diesel fuel will not interfere with the operation of emission-control technologies such as particulate matter filters. In combination with low-sulphur fuels, these technologies are designed to reduce harmful emissions such as sulphur oxides, nitrogen oxides, volatile organic compounds, and particulate matter.
- 1.22 The Benzene in Gasoline Regulations and the Sulphur in Diesel Fuel Regulations were identified as national enforcement priorities

Benzene—A substance found naturally in crude oil and released into the environment from sources such as vehicle emissions. In 1994, it was declared toxic because there is no known safe level of exposure and because benzene may cause cancers such as leukemia. As a volatile organic compound it also contributes to smog.

Sulphur—A substance that may occur in crude oil. Its presence in fuel products depends on the source of the crude and the refining process. High sulphur levels in fuels increase emissions of a number of pollutants from vehicles and contribute significantly to air pollution.



The benzene and sulphur content of fuels in Canada is subject to specific regulated limits. Environment Canada inspects fuels at refineries, blending facilities, import points and other locations in order to verify whether industry is meeting the limits.

from fiscal years 2003–04 to 2007–08. Environment Canada uses off-site inspections (for example, verification of a report submitted by a company) and on-site inspections (for example, visits to a refinery to sample fuels) to verify compliance with these regulations. Although inspections and other compliance and enforcement activities undergo an annual planning process, Environment Canada did not prepare an overall assessment as to how these activities might be designed and resourced such that conclusions about compliance would have a high level of confidence.

content regulations is high. For both regulations, Environment Canada has indicated that compliance is high. Its finding is part of the Department's justification for removing the regulations from its list of high priorities in 2008. From 1 April 2002 to 31 March 2008, Environment Canada reports an overall compliance level of 99 percent for both regulations based on the inspections and investigations undertaken. This includes compliance with both administrative and fuel content requirements. In addition, reporting by industry on the Benzene in Gasoline Regulations indicates few violations of the fuel content requirements. For example, in 2006, there was only one reported case where the benzene limits were exceeded. For certain compliance options, these industry reports must be audited by an independent certified auditor. The Sulphur in Diesel Fuel Regulations do not require industry to report directly on exceedances.

1.24 Environment Canada has not assessed the sufficiency of its enforcement approach. Environment Canada does not know how sufficient its overall approach is to enforcing the regulations, including the inspection of fuel contents and the verification of reports prepared by industry. For example, the Department has not determined whether it inspects refineries and other suppliers frequently enough and where the gaps are. As well, it has focused inspection resources on refineries, blending facilities, and importers but conducted few inspections at service stations and wholesalers. The Department has justified this aspect of its approach by saying that inspection of upstream sources of fuels (such as refineries) will provide evidence of compliance at downstream outlets (such as service stations). It has not conducted an overall assessment of the sufficiency of its enforcement approach, although this could support the Department's assertions about compliance rates and identify gaps in the approach.

- **1.25** Quality assurance of the enforcement process. Two of Environment Canada's tools for assuring quality and consistency of the enforcement process and data nationwide are the Fuels Regulations Working Group and the enforcement database.
 - The Fuels Regulations Working Group is an example of a good practice. Its mandate is to ensure consistency in the way regulations dealing with fuels are applied across Canada.
 Established in 1999, the Working Group consists of Environment Canada program and enforcement staff from Ottawa and the regions, as well as laboratory personnel.
 - The enforcement database is a shared national structure for recording and reporting on the Department's enforcement work and the results achieved. Environment Canada notes that the database promotes consistency and quality in reporting and case management.
- **1.26** The Department has undertaken other projects to improve quality and consistency of enforcement activities. However, it has not conducted an overall assessment of the operations in the five regions to determine their quality and consistency.
- 1.27 Recommendation. Environment Canada should conduct an assessment of its implementation of the Benzene in Gasoline Regulations and the Sulphur in Diesel Fuel Regulations to
 - determine the acceptable compliance rate for each regulation for all sectors of the regulated community;
 - determine and implement compliance promotion and enforcement activities that need to be conducted: (a) to achieve the acceptable compliance rate, and (b) to provide assurance that there is a high level of statistical confidence in any compliance rate reported;
 - · develop and publicly report on performance indicators; and
 - determine what has gone well and which areas require improvement.

The Department's response. Environment Canada agrees with the recommendation that an assessment of all departmental activities under the Benzene in Gasoline Regulations and the Sulphur in Diesel Fuel Regulations will support a more integrated approach to the implementation of these regulations.

The Enforcement Branch, Compliance Promotion and Analysis Division and the Energy and Transportation Directorate will work on identifying performance measures and on a 2009–2010 compliance strategy, which will be completed by March 2009. The 2009–2010 compliance strategy will outline performance measures and will determine what compliance promotion and enforcement activities need to be conducted. There are new performance measures and requirements within the Cabinet Directive on Streamlining Regulations and these will be considered when reviewing and updating and the performance measures are designed to achieve the expected promotion priorities. These priorities are determined based on an assessment of the real and potential risks to the environment and analyze data on trends, patterns, modi operandi, and events that could have a negative impact on the environment or human health. The

Environment Canada will continue to develop and publicly report annually on performance indicators such as the number of regulatees conducted. Concerning the high level of statistical confidence in any derivation of performance indicators, the Environmental Enforcement National Data Input Standards for NEMISIS Files that will guide enforcement officers in the entry of data in the NEMISIS database Also, the NEMISIS National Quality Assurance and Quality Control Committee, which meets quarterly, is mandated to provide assurance

Environment Canada has done little to enforce the Flow Rate Regulations for gasoline

1.28 On 1 February 2001, the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations came into effect, setting limits on the flow of gasoline or gasoline blends during the refuelling of on-road vehicles. When the flow rate of fuel into a vehicle exceeds the vehicle's capacity to receive fuel, vapours of benzene and other volatile organic compounds are emitted into the air. At the time the regulations came



The Gasoline and Gasoline Blend Dispensing Flow Rate Regulations set limits on how quickly fuel flows from the pump. This is intended to reduce the exposure of Canadians to benzene and other air pollutants.

into effect, Environment Canada estimated that pumping of gasoline into cars was responsible for about 6 percent of the daily benzene intake by adult Canadians who are not regularly exposed to cigarette smoke. The regulations prohibit retailers and wholesale purchasers/consumers (such as private pumps at a taxi stand) from using a nozzle to dispense regulated fuels if the flow rate exceeds 38 litres per minute. The Department's analysis indicates that the impact of the regulations will represent an annual decrease of about 1,500 tonnes of volatile organic compounds in the atmosphere, including about 15 tonnes of benzene.

1.29 Community to be regulated by the Flow Rate Regulations not yet completely identified. Seven years have passed since the Flow Rate Regulations came into effect. Environment Canada has still not completely identified the community to whom the regulations apply. Nationally known companies and major independent retailers are probably aware of the regulations as a result of the annual compliance promotion package they receive from Environment Canada and letters sent when the regulations were first published and when they came into force. However, other retailers and wholesalers in Canada may not know about the regulations. Environment Canada is aware of the deficiency.

1.30 Almost no enforcement of the Flow Rate Regulations to date. The Flow Rate Regulations have not been a priority for Environment Canada and the Department has done little to enforce them. Recently, Environment Canada's Ontario Region conducted two studies of gasoline retailers and wholesale purchasers/consumers to get a preliminary idea of compliance rates in the province. For the samples tested, the studies noted that independent retail stations and those located in rural communities were less likely to be in compliance with the regulations. Environment Canada does not know what the compliance rate in the rest of Canada might be.

1.31 Recommendation. Environment Canada should identify the community of retailers and wholesalers subject to the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations and conduct compliance promotion and enforcement activities targeting members of the community.

The Department's response. Environment Canada agrees with the recommendation that the Department should identify the community of retailers and wholesalers subject to the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations, and conduct compliance promotion activities targeting members of the community.

Environment Canada has identified the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations as a priority for compliance promotion activities in 2008–09. A survey has already been initiated to expected to be completed by November 2008. After the survey results have been analyzed, a fact sheet will be developed and disseminated, by December 2008, to increase awareness of the requirements of these regulations.

The Enforcement Branch, Compliance Promotion and Analysis Division and the Energy and Transportation Directorate will work promotion plan for 2009-2010 and future years, by March 2009, that is in line with departmental enforcement and compliance promotion priorities. These priorities are determined based on an assessment of

The compliance strategy and compliance promotion plan will foster the compliance promotion and enforcement required to ensure the subject community complies with the regulations. The compliance considerations, including intensity of compliance promotion and enforcement, and will provide an overall description and analysis (size, location, composition, etc.) of the regulatees. The strategy will also outline performance indicators that could include rate of compliance, number of enforcement activities carried out (e.g. inspections and

1.32 Environment Canada reports on enforcement activities and fuel content. Every year, Environment Canada publishes statistics on its website about inspections, investigations, enforcement measures, and other activities connected with regulations under the Canadian Environmental Protection Act, 1999. At the conclusion of our audit, the most recent publicly available enforcement data was for the 2004-05 fiscal year. Environment Canada also publishes two reports entitled Sulphur in Liquid Fuels and Benzene in Canadian Gasoline. These present

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annual summary data on fuel volume and content, as reported by producers and importers. The latest benzene report published is for 2006. Environment Canada expected the sulphur report for 2006 to be released in the summer of 2008.

Economic measures

- Implementation Act to ensure that Canada meets its climate change obligations under the Kyoto Protocol. The Act requires the Minister of the Environment to prepare an annual Climate Change Plan that sets out measures to reduce greenhouse gas (GHG) emissions as well as the expected yearly reductions resulting from each measure. In subsequent plans, the Department must also report on progress since the previous year, including the results achieved by each measure. Environment Canada published the government's first plan under the Act in August 2007 and a second plan in May 2008.
- 1.34 For this audit, we examined the expected reductions in greenhouse gas emissions related to two economic measures included in Environment Canada's 2007 Climate Change Plan: the Clean Air and Climate Change Trust Fund, and the Public Transit Tax Credit. We expected that the responsible departments would have used adequate analyses to determine the expected emission reductions to be achieved, and that the departments would have adequate monitoring and verification processes in place to ensure that these results were being achieved.

The Clean Air and Climate Change Trust Fund—A trust is created when one party, the settlor, transfers legal ownership of property including funds to another party, the trustee, for the benefit of a third party, the beneficiary. In the Clean Air and Climate Change Trust Fund, the federal government (the settlor) has transferred \$1.519 billion to a trustee. In turn, the trustee has been instructed to disburse to the provinces and territories (the beneficiaries) their portion of the trust fund.

Estimates of greenhouse gas emission reductions under the Trust Fund are flawed and unverifiable

- 1.35 In its March 2007 Budget, the federal government announced a transfer of \$1.519 billion to provincial and territorial governments under the Clean Air and Climate Change Trust Fund. The Trust Fund is an element of *Turning the Comer*, a government initiative described by Environment Canada as "Canada's plan to reduce greenhouse gas emissions and air pollution." Both the 2007 Budget and *Turning the Comer* state that the Trust Fund will yield real reductions in greenhouse gas emissions and other air pollutants. No expected reductions from the Trust Fund were quantified in these documents.
- 1.36 The Trust Fund was included in Environment Canada's Climate Change Plan with respect to the *Kyoto Protocol Implementation Act* in 2007 and again in 2008. In both years, the Plan states that the Trust Fund is expected to reduce GHGs by 16 megatonnes annually from 2008 through 2012, for a total of 80 megatonnes.

- 1.37 Expected emission reductions for the Trust Fund in the 2008 Plan are contradictory. The Trust Fund's 16 megatonnes of annual expected GHG emission reductions presented in the 2008 Plan account for a significant proportion of the expected emission reductions from all measures presented in the Plan. However, the government also excludes the Trust Fund's expected reductions from the calculation of Canada's total future emissions levels, effectively assuming a zero result from the Trust Fund. The 2008 Plan did not highlight or explain this specific contradiction. The 2008 Plan does not clearly explain what emission reductions Canadians can expect to be achieved with the \$1.519 billion already transferred to the Trust Fund.
- Environment Canada included a statement of the expected reductions from the Trust Fund in the Plan because it is required by the Act to report on expected reductions for each measure included in the Plan. In subsequent plans, Environment Canada is required to report on the implementation of the measures, which includes reporting on the results—the actual GHG emission reductions achieved. The figures quoted for the Trust Fund are significant. Given that expected emission reductions from some other measures decreased in the 2008 Plan, the Trust Fund now accounts for around 80 percent of the total expected emission reductions for all quantified measures in the first year of the 2008 Plan and around 26 percent of expected reductions for all quantified measures in the 2008 to 2012 time period.
- Analysis supporting Environment Canada's expected greenhouse gas emission reductions is weak. There are problems in how the 80 megatonnes of expected reductions against the Trust Fund for the years 2008 to 2012 were derived. The Department conducted almost no analysis to support that figure, and did not perform key types of analysis. The little analysis it did undertake is based on flawed assumptions—for example, that all provinces and territories face identical opportunities, challenges, and economic conditions for achieving emission reductions. Since the basis for the estimate is flawed, we cannot determine what a reasonable range of expected results should have been.
- 1.40 Environment Canada cannot monitor or verify the Trust Fund results. In our December 2008 Auditor General's Report, Chapter 1, A Study of Federal Transfers to the Provinces and Territories, we note that the provinces and territories frequently have no legal obligation to spend sums transferred to them through a trust fund for the purpose announced by the federal government. Provinces and territories also frequently have no legal obligation to report to the federal government on how the money was spent and what was achieved. Environment

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Canada has acknowledged that the provincial and territorial governments are accountable only to their own constituencies for expenditures and results under the Trust Fund, not to the federal government. The Department has not developed and implemented even a voluntary system for monitoring greenhouse gas emission reductions under the Trust Fund. Nevertheless, Environment Canada made a claim of expected results in 2007 and repeated it in 2008, knowing that the nature of the Trust Fund makes it very unlikely that the Department can report real, measurable, and verifiable results.

Expected environmental impacts for the Public Transit Tax Credit are supported by poor analysis

1.41 In its 2006 Budget, the federal government announced the Public Transit Tax Credit (Exhibit 1.2). The measure is intended to ease traffic congestion in urban areas and to improve the environment through the use of public transit. The measure is also intended to allow eligible transit users to save on their taxes if they claim the tax credit. The government indicated that the cost, in foregone tax revenue, for fiscal years 2006–07 through 2008–09 would be \$635 million. The Department of Finance Canada states that it cannot report on the actual cost of the program at this time because the required income tax data for 2007, the first full year of the credit, will not be available until 2009.



The Public Transit Tax Credit is intended to ease traffic congestion in urban areas and to improve the environment through the use of public transit. Eligible Canadians can save on their taxes by claiming the credit.

Exhibit 1.2 Why is the government giving a tax credit for public transit?

"Canadians are concerned about traffic congestion and the harmful greenhouse gas emissions that come with it. Increasing the use of public transit, including buses, subways, commuter trains and ferries, will help ease traffic congestion in our urban areas and reduce air pollution that dirties our air and affects our health. The tax credit for public transit makes public transit more affordable for Canadians and provides clean air in our communities. Encouraging greater use of public transit is one element of the Government of Canada's environmental agenda to reduce greenhouse gas emissions and promote clean air."

Source: Government of Canada

1.42 In its 2007 Climate Change Plan under the Kyoto Protocol Implementation Act, Environment Canada stated that the Tax Credit is expected to result in emission reductions of 220,000 tonnes each year from 2008 through 2012. This was approximately double Finance Canada's estimate of the resulting emission reductions in its strategic environmental assessment. In its 2008 Plan, Environment Canada amended the figure for expected reductions to an average of 35,000 tonnes per year—about 16 percent of the original estimate. Given the lowered figure, the Tax Credit will have a negligible impact

on Canada's greenhouse gas emissions. Many factors influence public transit ridership, including the price of gasoline. The result is that it is almost impossible to measure actual greenhouse gas emission reductions attributable to the tax credit. With regard to other air emissions, Environment Canada could not provide any analysis to support the assertion that the Tax Credit would result in measurable impacts.

- 1.43 Environment Canada and Finance Canada to jointly monitor greenhouse gas emission reduction results-methodology for monitoring not yet developed. Environment Canada has indicated that it is responsible for providing an estimate of greenhouse gas emission reductions for each year up to 2012 and that monitoring and reporting on results of the Public Transit Tax Credit would be undertaken by Finance Canada. The methodology by which emission reductions will be monitored and estimated has not yet been developed. Finance Canada states that its annual monitoring is limited to providing estimates and projections for tax expenditures, including the Public Transit Tax Credit, based on data available from the Canada Revenue Agency. In addition, Finance Canada has confirmed that a full evaluation of the Tax Credit against all of the policy objectives stated in Budget 2006 will be undertaken starting in 2011, as income tax data relating to the credit becomes available. Finance Canada confirmed that this evaluation will include consideration of Environment Canada's estimated results for the Tax Credit in reducing greenhouse gas emissions.
- 1.44 Finance Canada cannot demonstrate that it has assessed the design of the Tax Credit using its own framework. In 2005, Finance Canada published A Framework for Evaluation of Environmental Tax Proposals, for use in assessing the integration of economic and environmental considerations (such as impacts on greenhouse gases and other air emissions) in the development of new environmental tax proposals. The Framework states, "Where a clear goal is established, proposed tax measures must be assessed against a set of criteria that must also guide the evaluation of alternative forms of intervention." Finance Canada did not provide documentation that it had assessed the key environmental and economic impacts of the Public Transit Tax Credit in accordance with the Framework. The Department claimed that this analysis only existed within a ministerial briefing note, which we requested for audit purposes and which Finance Canada declined to provide. According to Finance Canada, this information could not be provided to us because it was a Cabinet confidence. The Department provided a copy of its

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Strategic Environmental Assessment— The Government of Canada's Cabinet Directive on the Environmental Assessment of Policy Plan and Program Proposals (or Strategic Environmental Assessment) says that an assessment must be conducted for any policy, plan or program proposal that is submitted to a Minister or to Cabinet for approval and whose implementation may result in important environmental effects, either positive or negative. According to the Privy Council Office, departments are accountable for adhering to the directive and for the quality of their analysis.

strategic environmental assessment but was unable to show how it was integrated into the Department's overall analysis under the Framework, since it too constituted a Cabinet confidence.

1.45 A consultant's report commissioned by Finance Canada prior to the Tax Credit's approval dismissed an alternative proposal because the cost to government would be excessive (\$800 per tonne of greenhouse gases reduced) and the reduced fares would have little impact on transit usage. For the Public Transit Tax Credit as announced, Finance Canada estimated that the cost through tax revenue loss would be much higher, ranging from around \$2,000 to \$3,000 per tonne of greenhouse gases reduced between 2006 and 2010. Based on this estimated cost and the lowered expectations for the GHG emission reductions in the 2008 Plan, the cost per tonne will be even higher.

Voluntary agreements

- 1.46 A voluntary agreement involves one or several governments, one or several companies, and/or industry sector associations. The agreement commits industry to specific challenges or performance levels. According to Environment Canada, these agreements are possible when the parties involved share common objectives and can each derive benefits from addressing a particular environmental issue. Industry is interested in this type of agreement because it is flexible and allows businesses to enhance their public image or improve relations with the government. According to Environment Canada, failure to carry out a signed agreement could harm a business's public image and relations with the government. Some companies indicate that voluntary agreements provide an opportunity to improve their environmental performance.
- **1.47** For this audit, we examined three voluntary agreements that focus on reducing atmospheric emissions of pollutants or greenhouse gases. Each agreement involved an industry sector association:
 - the Railway Association of Canada,
 - the Canadian Chemical Producers' Association, and
 - the Air Transport Association of Canada.
- **1.48** In developing and implementing these agreements, we expected that the responsible departments would have applied the design elements, including measuring, reporting, and verifying results, described in Environment Canada's *Policy Framework for Environmental Performance Agreements*.



Regulations to address air pollutants and greenhouse gas emissions from railways are not expected to be in place before 2011. For the short term, the government has negotiated a Memorandum of Understanding with the Railway Association of Canada to deliver action on these issues.

The voluntary agreements we examined meet many of the requirements

- 1.49 Railway Association of Canada agreement. In 2007, the Government of Canada (represented by Environment Canada and Transport Canada) and the Railway Association of Canada signed a memorandum of understanding to reduce emissions of criteria air contaminants and greenhouse gases resulting from the operation of railway locomotives by Canadian railway companies. According to the government, this voluntary agreement delivers action to address air pollutants and greenhouse gas emissions from railways in the short term. Regulations under the *Railway Safety Act* will not be effective until 2011.
- 1.50 The agreement meets many of the requirements for a voluntary agreement: it sets out clearly defined objectives and targets, and provides for the reporting of results. Under the agreement, Environment Canada and Transport Canada are to assist the Association's members in sharing knowledge about and identifying ways to decrease greenhouse gas emissions. For example, the two departments convened the May 2008 Rail Conference in Toronto, with sessions on the control of air emissions, emissions trading, innovations, and technological advancements.
- 1.51 The agreement requires that a qualified auditor periodically assess the Association's reports, processes, and supporting documentation. This is to provide assurance to Environment Canada and Transport Canada that methodology and baseline data are reasonable and accurate. The Association's annual report on the agreement for 2006 was the first to include results. We would have expected the reported results to be audited. The departments cannot provide any indication that an audit took place, and they are currently searching for an auditor.
- 1.52 Canadian Chemical Producers' Association agreement. Under a memorandum of understanding with the Government of Canada (represented by Environment Canada, Industry Canada, and Health Canada), the Government of Ontario, the Government of Alberta, and the Canadian Chemical Producers' Association undertook to reduce atmospheric releases of volatile organic compounds from the chemicals sector by 25 percent between 1997 and 2002. This was a follow-up to a previous agreement that focused on reducing emissions of toxic substances by chemical manufacturers. The agreement was originally to take effect in 1998 and expire in 2002. Because of delays in approval, it did not come into effect until 2001 and expired in 2005.

However, there was no change to the target of a 25-percent emission reduction by the end of 2002.

1.53 The agreement met many of the requirements for a voluntary agreement: it set clearly defined objectives and targets, and provided for the reporting of results. Data from Environment Canada and the Association show success in meeting the agreement's target of a 25-percent reduction in emissions for volatile organic compounds by the end of 2002. According to Environment Canada, the Association has processes in place to verify reported results that meet the requirements for regular, credible verification. However, a systematic, documented assessment by the Department to support this assertion is lacking. Environment Canada did not undertake a formal evaluation of the agreement when it ended.

1.54 Air Transport Association of Canada agreement. In June 2005, the Government of Canada (represented by Transport Canada) and the Air Transport Association of Canada signed a memorandum of understanding to limit or reduce emissions of greenhouse gases from aviation in Canada. Under the agreement, the Association is to encourage its members to improve efficiency and thus reduce overall GHG emissions from their fleet. Transport Canada is assessing the impact of recent membership changes in the Association on the agreement.

agreement: it sets out clearly defined objectives and targets, and provides for the reporting of results. However, the baseline was not clearly defined and there is limited documentation about consultations undertaken prior to the signing of the agreement. The agreement requires that a qualified auditor periodically assess the Association's reports, processes, and supporting documentation. This is to provide assurance to Transport Canada that methodology and baseline data are reasonable and accurate. The Association's annual report on the agreement for 2006 was the first to report results. We would have expected the reported results to be audited. The Department cannot provide any indication that an audit took place. The Department has indicated that the results of the 2007 report, scheduled to be released later in 2008, will be audited. However, to date, an auditor has not been appointed.



Air transportation is a major source of greenhouse gas emissions in Canada. The Memorandum of Understanding with the Air Transport Association of Canada seeks to improve efficiency and reduce the overall emissions of the industry.

Conclusion

- 1.56 For the four types of policy tools we examined, the government cannot demonstrate that the results it has reported have actually been achieved, or that processes are in place to verify the results reported by the private sector.
- 1.57 Environment Canada has not conducted a final assessment of the results to confirm the stated success of the pollution prevention plan for acrylonitrile, instituted in response to a formal notice published by the Department in May 2003. In addition, the notice addressed one source of acrylonitrile air emissions, but overall emissions increased substantially between 2003 and 2006. Efforts by Environment Canada over the past few years to work with the sources of increased air emissions have reversed the upward trend by almost 50 percent in 2006–07; however, total emissions in 2007 are still almost three times higher than in 2000, when the substance was declared toxic.
- 1.58 Environment Canada claims that the fuel content limits set out in the Benzene in Gasoline Regulations and the Sulphur in Diesel Fuel Regulations are being met; however, it has not undertaken an overall assessment that would support a high level of confidence in its conclusions. The Department has put little effort into implementing the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations. It does not know whether the Flow Rate Regulations are being complied with and achieving results.
- 1.59 Estimates by Environment Canada indicate that the Public Transit Tax Credit will lead to negligible reductions in Canada's greenhouse gas emissions. Equally questionable is the impact of the Clean Air and Climate Change Trust Fund, which transfers over \$1.519 billion to the provinces and territories to help them lower greenhouse gas emissions. Environment Canada has estimated that the initiative will lead to emission reductions totalling 80 megatonnes from 2008 to 2012. However, it has arrived at that figure on the basis of flawed analyses. The government has stated that it does not intend to monitor whether targets are achieved because it does not have access to the necessary information and cannot control what the recipient governments do with the funding. Environment Canada made a claim of expected results in 2007 and repeated it in 2008, knowing that the nature of the Trust Fund makes it very unlikely that the Department can report real, measurable, and verifiable results.

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1.60 Transport Canada and Environment Canada met many of the major criteria—such as setting clear objectives and targets, and providing for monitoring and reporting on results—when they set up voluntary agreements with the Railway Association of Canada, the Canadian Chemicals Producers' Association (CCPA), and the Air Transport Association of Canada. The agreements focused on reducing atmospheric emissions of pollutants or greenhouse gases. Environment Canada claims success in meeting the targets of the CCPA agreement, now ended. However, the Department has not documented the assessment it used to confirm the credibility of the verification process used by the Association and relied on for this agreement. The other two agreements identify key processes—measuring, reporting, and verifying of results—but some have not yet been implemented. Preliminary results have been reported by the associations but they have yet to be audited for verification purposes.

About the Audit

Objectives

Our overall audit objective was to determine whether the responsible departments of the Government of Canada know if certain key policy tools used by the government to control air emissions are achieving actual results. Our audit work included four sub-objectives:

- to determine whether Environment Canada knows if selected pollution prevention plans implemented under the *Canadian Environmental Protection Act*, 1999 (CEPA 1999) are reducing emissions of pollutants into the air;
- to determine whether Environment Canada knows if compliance limits set by selected regulations under CEPA 1999 are being met;
- to determine whether selected departments can demonstrate that, for air emission reduction targets related to selected economic policy instruments, (a) expected reductions have been adequately designed, and (b) procedures are in place to know whether the expected reductions are being achieved; and
- to determine whether responsible departments can demonstrate that they have complied with requirements for implementing selected voluntary agreements.

Scope and approach

Air emissions have an impact on the health of Canadians and the environment. The policy tools used by the federal government to manage air emissions include pollution prevention plans, regulations under the Canadian Environmental Protection Act, 1999, economic measures, and voluntary agreements with industry. The policy tools examined in this audit were selected based on their materiality, auditability, and significance, as well as reference to them in the responses to environmental petitions submitted to the Auditor General of Canada. We also sought to make a selection covering different types of measures, pollutants, and industry sectors. Our audit work focused on three government organizations: the departments of Environment, Transport, and Finance Canada.

For each of the audit sub-objectives, we interviewed key departmental officials in Ottawa and regions across the country, as well as representatives of non-governmental organizations and industry. We selected non-governmental organizations and industry associations that could provide perspective on one or more of the policy tools included in our audit. Information from departmental officials helped us understand their organizations' policies and procedures used to develop, implement, and monitor the results of the various policy tools. Industry representatives provided feedback on the challenges and success factors for some of the policy tools included in our audit. For each of the audit sub-objectives, we undertook extensive reviews of documentation supplied to us by the departments.

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To help in determining whether compliance targets are being met for regulations under the Canadian Environmental Protection Act, 1999, we selected occurrence, inspection, and investigation files from the 2005–06 and 2006–07 fiscal years in all five of Environment Canada's regional offices (Pacific and Yukon, Prairie and Northern, Ontario, Quebec, and Atlantic). We chose files to cover a range of companies, facility types, case officers, compliance options, and inspection types. We selected 128 files (aiming for 25 from each region) to assess how procedures were applied during inspections and investigations connected with the Benzene in Gasoline Regulations and the Sulphur in Diesel Fuel Regulations. Because there had been no enforcement activity in those two years for the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations, this regulation was not included in the file review. The results of our file review did not allow us to generalize for each region individually or Canada as a whole. However, the file review enabled us to understand the procedures in place and the ways they are being applied.

Criteria

Listed below are the criteria that were used to conduct this audit and their sources.

Criteria	Sources			
Pollution Prevention Plans				
With regards to the Pollution Prevention Plans, we expect that Environment Canada is measuring and verifying the results achieved through the application of Pollution Prevention Plans under the Canadian Environmental Protection Act, 1999.	Canadian Environmental Protection Act (1999), Part 4— Pollution Prevention Treasury Board of Canada Secretariat, Preparing and Using Results-based Management and Accountability Frameworks			
	 (2005), sections 1.1 and 1.3 Treasury Board of Canada Secretariat, Results for Canadians: A Management Framework for the Government of Canada (2000), pages 5 and 6 			
Fuels Re	egulations			
We expect that for each of the three regulations (benzene in gasoline, sulphur in diesel fuel, and gasoline flow rates), Environment Canada has put in place procedures to know if compliance limits are being met.	Treasury Board of Canada Secretariat, Preparing and Using Results-based Management and Accountability Frameworks, Treasury Board of Canada Secretariat, 2005, sections 1.1 and 1.3			
	• Treasury Board of Canada Secretariat, Results for Canadians: A Management Framework for the Government of Canada (2000), pages 5 and 6			
	Environment Canada Compliance and Enforcement Policy for CEPA 1999 (2001)			
For each of the three regulations (Benzene in Gasoline, Sulphur in Diesel Fuel, and Gasoline Flow Rate), we expect that Environment Canada is publishing reports on progress and providing public information on compliance with the regulations.	Canadian Environmental Protection Act (1999), Part 11: Miscellaneous Matters—Report to Parliament			
	• Treasury Board of Canada Secretariat, Preparing and Using Results-based Management and Accountability Frameworks (2005), Section 1.1			
	• Treasury Board of Canada Secretariat, Results for Canadians: A Management Framework for the Government of Canada (2000), pages 5 and 6			

Criteria	Sources		
Economic Measures			
For two economic measures (Public Transit Tax Credit and Trust Fund), we expect that the results-based targets Environment Canada has developed in response to the <i>Kyoto Protocol Implementation Act</i> are based on adequate analyses.	 Kyoto Protocol Implementation Act, 2007, Section 10 Treasury Board of Canada Secretariat, Preparing and Using Results-based Management and Accountability Frameworks, Treasury Board of Canada Secretariat, 2005, Section 1.1 Treasury Board of Canada Secretariat, Results for Canadians: A Management Framework for the Government of Canada, 2000, pages 5 and 6 		
For two economic measures (Transit Pass Tax Credit and Trust Fund), we expect that Environment Canada has monitoring and verification processes in place.	 Kyoto Protocol Implementation Act, 2007, Section 5(b) Treasury Board of Canada Secretariat, Preparing and Using Results-based Management and Accountability Frameworks, Treasury Board of Canada Secretariat, 2005, Section 1.1 Treasury Board of Canada Secretariat, Results for Canadians: A Management Framework for the Government of Canada, 2000, pages 5 and 6 		

Voluntary Agreements

For each of the three agreements (Air Transport Association of Canada, Railway Association of Canada, Canadian Chemicals Producers' Association), we expect that the departments have applied the expected design elements in developing and implementing voluntary performance agreements.

These include the following:

- · clearly identified environmental objectives,
- · clear baselines,
- · measurable targets with timelines,
- · clear performance measures,
- · consultations with affected and interested stakeholders,
- · regular reporting requirements,
- credible third-party verification of results achieved, and
- · regular evaluation.

- Environment Canada Policy Framework for Environmental Performance Agreements, 2001, pages 6 and 7
- Treasury Board of Canada Secretariat and Industry Canada, Voluntary Codes: A Guide for their Development and Use

Audit work completed

Audit work for this chapter was substantially completed on 6 June 2008.

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- Appendix List of recommendations

The following is a list of recommendations found in Chapter 1. The number in front of the recommendation indicates the paragraph number where it appears in the Chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation Response Pollution prevention plans 1.13 Environment Canada should Environment Canada accepts this recommendation. Under review and revise its risk management Canada's 2006 Chemical Management Plan (CMP), 4,300 strategy for acrylonitrile and ensure substances have been identified as posing a potential risk to control measures are in place to deal human health and the environment. Five hundred of these with significant sources. (1.8–1.12) substances are deemed to be of the highest priority. Given the significance of this challenge, it is essential to devote resources to management activities in a manner commensurate with the risks involved. Acrylonitrile, a substance emitted in the gaseous form from plastic industry facilities, would have been part of the highest priority group if early risk management actions had not been taken in 2003. Risk management instruments have been put in place to cover the two facilities that have been responsible for over 99 percent of acrylonitrile emissions. In early 2000, when Environment Canada developed the chemical management program, now known as the CMP, various Canadian Environmental Protection Act, 1999 science-based instruments were considered and assessed to ensure that their use would be aligned with the risks to be managed. Pollution prevention plan notices are one such instrument, and are generally used in select situations where independent validation of data would not necessarily result in any increased level of environmental protection. Environment Canada believes that it has fulfilled its intended role for the oversight of this instrument. Furthermore, in Canada, jurisdiction over the environment is shared with provinces and territories. Therefore, interventions at the federal level with respect to particular pollutants have to

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be scientifically driven and of national concern. Otherwise, the best approach is to collaborate with the provinces/territories

directly concerned by the issue.

Response

In the case of the first plant, which was covered by the Acrylonitrile Pollution Prevention Plan Notice, it was necessary for the federal government to intervene, as the province had not yet developed its own standards. In the case of the second plant, where the provincial government was in a position to use its own tools to address the same issue, the federal government agreed to the use of the provincial instrument. In both situations, the environmental outcome is reduced atmospheric emissions of acrylonitrile to the lowest economically achievable levels.

As the CMP unfolds and lessons are learned from the numerous science-based interventions that are now being undertaken, the federal government will continue to refine its strategies for risk management. Relative to acrylonitrile, the 2002 Risk Management Strategy will be reviewed and updated based on current emissions from Canadian facilities with the objective of limiting releases from significant industrial sources to the lowest levels technically and economically achievable.

To achieve this intended outcome, the 2002 Risk Management Strategy update will incorporate consideration of the current emission profiles, best available technologies economically available and an examination of the existing controls at the provincial and federal levels.

The performance of the 2002 Risk Management Strategy will be measured through the achievement of any targeted reductions from significant sources of acrylonitrile emissions.

Environment Canada will undertake the implementation of the updated Risk Management Strategy by December 2009 and it will be carried out in collaboration and after consultation with other implicated parties and/or jurisdictional authorities.

Response

Fuels regulations

- 1.27 Environment Canada should conduct an assessment of its implementation of the Benzene in Gasoline Regulations and the Sulphur in Diesel Fuel Regulations to
- determine the acceptable compliance rate for each regulation for all sectors of the regulated community;
- determine and implement compliance promotion and enforcement activities that need to be conducted: (a) to achieve the acceptable compliance rate, and (b) to provide assurance that there is a high level of statistical confidence in any compliance rate reported;
- develop and publicly report on performance indicators; and
- determine what has gone well and which areas require improvement. (1.16 - 1.26)

Environment Canada agrees with the recommendation that an assessment of all departmental activities under the Benzene in Gasoline Regulations and the Sulphur in Diesel Fuel Regulations will support a more integrated approach to the implementation of these regulations.

The Enforcement Branch, Compliance Promotion and Analysis Division and the Energy and Transportation Directorate will work on identifying performance measures and on a 2009–2010 compliance strategy, which will be completed by March 2009. The 2009–2010 compliance strategy will outline performance measures and will determine what compliance promotion and enforcement activities need to be conducted. There are new performance measures and requirements within the Cabinet Directive on Streamlining Regulations and these will be considered when reviewing and updating the compliance strategy for these regulations. The compliance strategy and the performance measures are designed to achieve the expected outcomes in line with departmental enforcement and compliance promotion priorities. These priorities are determined based on an assessment of the real and potential risks to the environment and health using tools such as environmental scanning to gather and analyze data on trends, patterns, modi operandi, and events that could have a negative impact on the environment or human health. The performance measures that are part of the 2009-2010 compliance strategy could include the compliance rate and the number of compliance promotion and enforcement activities.

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Response

Environment Canada will continue to develop and publicly report annually on performance indicators such as the number of regulatees identified, and the number of inspections and investigations conducted. Concerning the high level of statistical confidence in any derivation of performance indicators, the Environmental Enforcement Division is already addressing this issue via various alternative measures, including the development and implementation of the National Data Input Standards for NEMISIS Files that will guide enforcement officers in the entry of data in the NEMISIS database and is expected to be implemented on or before December 2008. Also, the NEMISIS National Quality Assurance and Quality Control Committee, which meets quarterly, is mandated to provide assurance that there is a high level of statistical confidence in all compliance data reported.

1.31 Environment Canada should identify the community of retailers and wholesalers subject to the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations and conduct compliance promotion and enforcement activities targeting members of the community. (1.28–1.30)

Response

Environment Canada agrees with the recommendation that the Department should identify the community of retailers and wholesalers subject to the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations, and conduct compliance promotion activities targeting members of the community.

Environment Canada has identified the Gasoline and Gasoline Blend Dispensing Flow Rate Regulations as a priority for compliance promotion activities in 2008–09. A survey has already been initiated to identify the regulatory community affected by these regulations and is expected to be completed by November 2008. After the survey results have been analyzed, a fact sheet will be developed and disseminated, by December 2008, to increase awareness of the requirements of these regulations.

The Enforcement Branch, Compliance Promotion and Analysis Division and the Energy and Transportation Directorate will work closely together to develop a compliance strategy and compliance promotion plan for 2009–2010 and future years, by March 2009, that is in line with departmental enforcement and compliance promotion priorities. These priorities are determined based on an assessment of the real and potential risks to the environment and human health, using tools such as environmental scanning to gather and analyze data on trends, patterns, various modi operandi, and events that could have a negative impact on the environment or human health.

The compliance strategy and compliance promotion plan will foster the coordination and provide consistency during the implementation phase should this regulation be identified as a departmental enforcement and compliance promotion priority. The compliance strategy will outline the best methods of implementing and measuring the compliance promotion and enforcement required to ensure the subject community complies with the regulations. The compliance strategy will identify performance measures and strategic considerations, including intensity of compliance promotion and enforcement, and will provide an overall description and analysis (size, location, composition, etc.) of the regulatees. The strategy will also outline performance indicators that could include rate of compliance, number of enforcement activities carried out (e.g. inspections and investigations) and the number of responses to alleged violation (e.g. warning letters, environmental protection compliance orders and prosecutions).

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Report of the Commissioner of the Environment and Sustainable Development to the House of Commons—December 2008

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Report of the
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Sustainable Development

to the House of Commons

DECEMBER

Chapter 2
Managing Severe Weather Warnings—
Environment Canada





2008





Report of the Commissioner of the

Environment and Sustainable Development

to the House of Commons

DECEMBER

Chapter 2

Managing Severe Weather Warnings— Environment Canada



The December 2008 Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 5, Appendices, and five chapters. The main table of contents for the Report is found at the end of this publication.

The Report is available on our website at www.oag-bvg.gc.ca.

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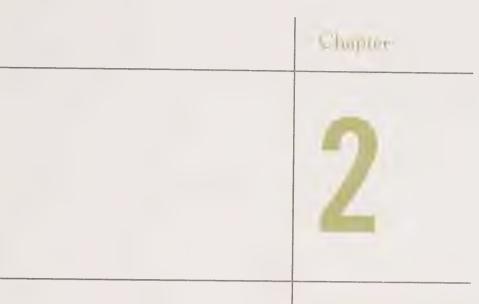
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Managing Severe Weather Warnings
Environment Canada

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement
for our audits, we also draw upon the standards and practices of other disciplines.

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Managing Severe Weather Warnings Environment Canada

Main Points

What we examined

Environment Canada is Canada's primary source of weather information. Its weather services are delivered not through a single unit within the Department but through a variety of departmental activities, overseen by a committee of senior managers—the Weather and Environmental Services Board (WESB). In the 2006-07 fiscal year, spending on weather and environmental services accounted for around \$340 million, or about one third of Environment Canada's annual budget.

Environment Canada reports that it issues over 10,000 severe weather warnings, watches, and statements every year. We examined whether the Department's systems and procedures adequately support the delivery of timely and accurate severe weather warnings to Canadians. now and in the future. We looked at Environment Canada's management of its weather observation network, the implementation of a new, advanced forecaster workstation called NinJo, and the delivery and verification of severe weather warnings. We also examined the Department's planning process that supports the delivery of severe weather warnings. We did not examine Environment Canada's public forecasting program or other weather and environmental services such as those related to air quality, climate, or hydrometric services.

Why it's important

Severe weather such as tornadoes, severe thunderstorms, heavy snowfalls, and freezing rain can result in property damage, crop damage, injuries, and loss of life. Severe weather can affect many sectors of the Canadian economy from transportation, to tourism, to agriculture.

The Intergovernmental Panel on Climate Change predicts that Canadians can expect more severe weather events as a result of climate change. Timely and accurate warnings of severe weather can allow Canadians to take appropriate action. For example, a high heat and humidex advisory can trigger media announcements about ways to beat the heat, help ensure that socially isolated individuals and other vulnerable groups are reached, and lead to the opening of public cooling centres.

What we found

- Although there has been some ad hoc verification in most regions, Environment Canada does not have a national program or approach to verify the timeliness, accuracy, or effectiveness of its severe weather warnings. This type of information would allow the Department to know how good a job it is doing across Canada, whether current performance is reasonable, and where it needs to make improvements to its services. Such information would also assist it in making sound investment decisions.
- The Department relies on a number of means to issue severe weather warnings to Canadians, including the Internet and the media. Despite its efforts, there is no national system in place that automatically warns the public about severe weather events or other emergencies. Such a system would communicate warnings over all radio and television stations and through mobile devices such as cellular phones. Weatheradio is Environment Canada's only tool that automatically alerts the public of severe weather warnings, but national public surveys indicate that the public's use of Weatheradio is low.
- Environment Canada has not adequately managed its weather observation networks, including radar and surface stations, to ensure that it can continue to provide the necessary data to issue and verify severe weather warnings. Environment Canada does not have the information on the performance of its assets—for example, trends in repair costs and failure rates during severe weather events—that it needs to make investment decisions over the life cycle of the assets. Investment decisions include whether to repair equipment or replace it.
- The Department is facing many significant challenges—such as implementing a robust and useful system to verify severe weather warnings, managing its monitoring networks over their life cycle with limited resources, and addressing the risks related to the Department's current strategy of relying on partners. It does not have an up-to-date long-term strategy for meeting those challenges and ensuring that it can continue to deliver timely and accurate severe weather warnings in the future.

The Department has responded. The Department agrees with all of recommendation throughout the chapter.

Introduction

Effects of severe weather on the well-being of Canadians

- 2.1 Severe weather, such as heavy snowfalls, freezing rain, severe thunderstorms, and tornadoes, can cause loss of life, injury, and damage to property and businesses. Many sectors of the Canadian economy, such as transportation, tourism, energy, and agriculture, can be significantly affected by severe weather. Those that have to respond to emergencies that result from severe weather, including the police and fire departments, can also be affected.
- 2.2 Severe weather events can be local and short in duration, such as tornadoes, while other events, such as severe snowstorms, can cover large geographical areas and last for days. These events can be costly (Exhibit 2.1). The Intergovernmental Panel on Climate Change predicts that with climate change, Canadians can expect to experience more severe weather, including intense rain events, heat waves, and storm surges. Warnings can help to minimize damages.

Exhibit 2.1 Severe weather events in Canada can be costly

- Severe thunderstorms, Southern Ontario (2005): The Insurance Bureau of Canada estimated damage of about \$500 million, the greatest insured loss in the province's history.
- Hurricane Juan, Nova Scotia (2003): This was one of the most powerful and damaging hurricanes to ever affect Canadá. The category 2 hurricane had winds reaching up to 174 kilometres an hour and caused 8 deaths.
- Tornado, Pine Lake, Alberta (2000): This tornado hit at 300 kilometres an hour, resulting in 12 deaths, more than 140 injuries, and \$30 million in economic losses.
- Ice storm, Quebec, Ontario, and New Brunswick (1998): This storm had an
 estimated cost of \$5.4 billion, resulting in the largest insurance payout in Canadian
 history, with more than \$1.6 billion paid by insurers. The storm caused 28 deaths
 and directly affected more people than any previous weather event in Canada.
- Floods, Saguenay, Quebec (1996): In less than 36 hours, 290 millimetres of rainfall caused at least 10 deaths; washed out thousands of homes, roads, and bridges; and downed power lines. A total of 15,825 people had to leave their homes.

Sources: Canadian Disaster Database, Public Safety Canada; Environment Canada; Insurance Bureau of Canada



Hurricane Juan, Prospect, Nova Scotia, September 2003

Source: Environment Canada, Photo: Doug Mercer

Special weather statements and severe weather watches and warnings

- 2.3 Environment Canada issues alerts to Canadians about weather conditions that are occurring or expected to occur and that could have an impact on their safety and/or cause damage to property or the environment. Alerts can take the following forms:
 - Special weather statements. These statements are issued for weather events that are unusual, cause general inconvenience or public concern, and cannot be adequately described in a weather forecast.
 - Severe weather watches. These watches provide a "heads-up" that conditions are favourable for a possible summer or winter storm. They may be issued up to 6 hours before summer events and at least 12 to 24 hours before winter events.
 - Severe weather warnings. These warnings alert the public that severe weather is occurring or will occur. They are issued when severe weather is expected to affect land-based communities within 6 to 24 hours.
- 2.4 These weather alerts may be issued for a variety of weather conditions, such as hurricanes, tornadoes, severe thunderstorms, heavy rainfall or snowfall, winter storms or blizzards, high winds, blowing snow, freezing rain or drizzle, hail, frost, and temperature-related extremes (for example, high heat and humidity, wind chill, and flash freezes). Environment Canada also issues marine warnings; provincial governments are responsible for issuing flood warnings.

Environment Canada's weather and environmental services

- 2.5 Environment Canada is Canada's primary source for weather information, with operations that run 24 hours a day, 7 days a week. The Department's mandate for weather services is broadly defined and is derived from the *Department of the Environment Act*. This act states that the powers, duties, and functions of the Minister of the Environment extend to and include all matters relating to meteorology "over which Parliament has jurisdiction, not by law assigned to any other department, board, or agency of the Government of Canada."
- 2.6 Environment Canada's weather and environmental products and services include collecting meteorological, hydrological, and climate data; producing five-day public forecasts and marine forecasts; issuing severe weather warnings; and producing seasonal forecasts. In the 2006–07 fiscal year, Environment Canada reported that gross expenditures for its full range of weather and environmental services

(for example, weather services, hydrometric services, and air quality monitoring) were around \$340 million (about one third of total gross expenditures); these services employed about 2,500 staff. The Department considers severe weather warnings to be the primary focus of weather-related services.

- 2.7 Environment Canada also provides specialized weather services to the aviation community; meteorological support to national defence; and marine meteorological services, including ice services such as current conditions and forecasts for ice and icebergs. It has cost recovery arrangements with NAV CANADA (NAVCAN), National Defence, and the Canadian Coast Guard related to these weather services. Environment Canada reports that its weather and environmental services as a whole provided the Department with around \$55 million in re-spendable revenue in the 2006–07 fiscal year.
- 2.8 Environment Canada's weather monitoring network forms the foundation for the Department's weather services, with meteorologists using data from this network and from around the world for modelling, producing, and verifying forecasts and severe weather warnings. Weather, hydrological, and climate data is important for many of Environment Canada's programs and the activities of other organizations, such as building and infrastructure design.
- 2.9 In the mid-1990s, Environment Canada's weather services were delivered through the Atmospheric Environment Service (AES), when the federal government's Program Review significantly reduced the Department's capital funding and its workforce with the closure of 56 weather offices. Following a study on alternative service delivery, in December 1999, the Meteorological Service of Canada (MSC) was established as a service organization within Environment Canada, replacing the AES.
- 2.10 In March 2003, the MSC began a five-year transition initiative. The transition involved new funding of about \$75 million over five years and \$5 million a year thereafter. The funding was to be used to consolidate forecast operations into five main storm prediction centres, rationalize the monitoring infrastructure of the MSC, improve products and services, and address important human resource challenges. With the transition funding, it was expected that Canadians would see an improvement in the accuracy and timeliness of forecasts and in the prediction of severe weather events. Environment Canada was to evaluate the transition initiative in 2008.

- 2.11 In the 2004–05 fiscal year, Environment Canada began a reorganization within the Department. Prior to this time, the MSC was led by an assistant deputy minister, with information technology services managed from within the MSC. As a result of the reorganization, planning and priority setting for weather and environmental services derive from a new results-based management structure that is overseen by the Weather and Environmental Services Board (WESB)—a senior departmental committee consisting of assistant deputy ministers and regional directors general. The Board reports to the Department's Executive Management Council. The Department has centralized, in separate branches, functions that are key to the production and delivery of forecasts and warnings, such as information technology and research and development. A different board (the Departmental Management Services Board) oversees the information technology branch.
- 2.12 Environment Canada is working on obtaining certification for the weather and environmental services function under ISO (International Standards Organization) 9001. This is expected to result in improved effectiveness and efficiency in the Department's services, including forecast and warning services, and an increased emphasis on quality management. Under ISO 9001, the Department has documented a number of policies, procedures, and guidelines; periodic ISO audits of the Department's adherence to its processes identify non-conformance and areas where corrective action is required.

The process of producing severe weather warnings

- 2.13 The process of producing weather forecasts and severe weather warnings includes collecting meteorological data, using worldwide data in computerized numerical simulation models to estimate the current state of the atmosphere and predict its future state, and developing forecasts and warnings and delivering them to Canadians (Exhibit 2.2). Canada has been a world leader in producing highly automated regular forecasts. To produce severe weather warnings, however, it must rely more heavily on the direct involvement of meteorologists with real-time meteorological data.
- 2.14 A variety of measures may be used to assess the performance of the various stages of producing weather forecasts and warnings. For monitoring, the measures could include data availability and quality, downtime of assets during severe weather, incidence of repair, financial costs of network assets, and network density. For the production and delivery of severe weather warnings, the measures could include

accuracy and timeliness of warnings, warning lead times, false alarms, missed severe weather events, receipt and understanding of warnings, and actions that users may have taken to minimize risks because of the warnings they received.

2.15 In the modern-day world of meteorology, worldwide data on weather is necessary to run computer-generated weather prediction models. Under the coordination of the World Meteorological Organization (WMO), weather data collected by national meteorological services, including satellite data, is shared freely among members of the WMO. Canada belongs to the WMO and thus shares all Environment Canada data and forecasts with other members. Data is also shared within Canada with organizations such as The Weather Network.

Exhibit 2.2 The production of weather forecasts and weather warnings involves several steps



Step 1

Monitoring and gathering of weather data by Environment Canada



Step 2

Processing and analysis using numerical simulation models running on super computers



Step 3

Development of forecasts and warnings by meteorologists using model outputs, experience, and real-time weather data (such as radar imagery)



Step 4

Delivery of forecasts and warnings to the public and key clients using tools such as the Internet and Weatheradio

Source: Adapted from Environment Canada documents

2.16 Over the past decade, advances in meteorology and information technology science have had a notable impact on the capacity and effectiveness of weather forecasting. Rapid advances in hardware and software technology have allowed Environment Canada and other weather services around the world using worldwide weather data to improve computer-modelling techniques to the point that they now form the basis for all weather forecasting.

Focus of the audit

- 2.17 Our audit objective was to determine if Environment Canada's systems and procedures adequately support the delivery of timely and reliable severe weather warnings to Canadians. For the audit scope, we considered severe weather warnings to also include special weather statements and severe weather watches.
- 2.18 More details on the audit objective, scope, approach, and criteria are in About the Audit at the end of this chapter.

Observations and Recommendations

Life cycle management has not been implemented

- **2.19** Environment Canada's network of weather observation stations includes radar stations, upper air monitoring stations, marine observation stations, surface weather observation stations, and a network of lightning detection stations. The Department's upper air observations are complemented by observations collected through aircraft-mounted sensors. Environment Canada also operates climate monitoring stations, hydrometric monitoring stations, and air quality monitoring stations. In addition, it collects weather data from other international and Canadian sources, such as provincial governments.
- The Department's surface network consists of automated weather observation stations and a blend of manual and automated climate monitoring stations. Weather observation stations monitor weather variables, such as temperature, wind, and air pressure, on a continuous basis, whereas climate monitoring stations record the measurement of variables, such as minimum and maximum temperature and total precipitation, usually once or twice a day. Forecasters rely on data from weather stations to forecast the weather, including severe weather. Climate data is more important for identifying longer-term trends in climate, such as trends in temperature and precipitation.



Automatic Weather Station, Cape Dorset,

- 2.21 To ensure a well-functioning network and the collection of high-quality data, and to prevent obsolescence and rust-out of equipment, we expected that Environment Canada was managing its weather monitoring network using a life cycle management approach consistent with its objectives for providing severe weather warnings to Canadians. This type of approach is used to manage the total cost of ownership and performance of assets over their lifetime. It includes assessing data collection requirements and options, investing in network assets based on a combination of financial and non-financial information, operating the assets and regularly monitoring and assessing their condition and performance, and carrying out regular preventive maintenance.
- 2.22 Environment Canada has made a commitment to manage its monitoring network with a life cycle approach. However, departmental officials believe that allotted funding has been insufficient to implement such an approach. They told us that they have been managing within available funding and are concerned that the monitoring network is "nearing the breaking point." However, they could not support this view due to a lack of performance information. The Department expects the ISO initiative to result in better information in the future.
- **2.23 Investment in network assets.** Life cycle management includes planning for the eventual disposal and replacement of assets. We expected that Environment Canada was replacing and modernizing its network assets on a timely and optimal cost basis, which is important for ensuring the proper functioning of its networks and the continuous flow of high-quality data on weather conditions.
- 2.24 Environment Canada management reports produced over the last 10 years have noted that the Department's monitoring assets needed urgent, targeted reinvestment. In 2003, as part of its five-year transition initiative, Environment Canada received funding to modernize its network. Among the key reasons for this funding, it cited increasing equipment failures, and inaccurate data creeping into weather forecasting and national climate archives. The Department received about \$25 million over five years to invigorate the monitoring capacity of the Meteorological Service of Canada (MSC) by rationalizing its surface weather observation network, enhancing quality assurance and access to data, and enhancing the operation of aircraft-mounted sensors. Rationalizing the network was to include closing and decommissioning lower-priority surface weather observation stations and reallocating resources to maintain the remaining sites to acceptable standards.

- 2.25 A 2008 Environment Canada evaluation report noted that the Department had not achieved all of the targets related to invigorating its monitoring network. The report states that only 38 percent of the surface weather observation stations identified for closure had been closed, thus preventing the reallocation of resources to the remaining stations. According to the report, closing stations proved to be a sensitive issue at the local level, and land claims negotiations delayed the cleanup and remediation of some sites. The report also cited changes in resource allocation processes and department cutbacks as other factors that affected the rate at which the stations could be closed. The report also brought attention to the fact that the Department could not account for a significant portion of the funds allocated to invigorating the monitoring capacity of the Meteorological Service of Canada.
- 2.26 Environment Canada's financial data indicates that a large reinvestment/replacement gap may persist. Figures from the 2007–08 fiscal year presented to the Weather and Environmental Services Board show that the capital infrastructure used for monitoring meteorological, hydrological, and climate conditions had a historical value of about \$190 million but has depreciated by about 66 percent. Under life cycle management, this information should be integrated with non-financial information to present management with a complete picture of the condition of the Department's monitoring assets. We noted that certain information is not readily available or adequately integrated with this financial profile. This includes information on the performance of monitoring assets relative to data quality and availability; on trends in costs required to maintain existing assets at an acceptable level of performance (for example, unscheduled maintenance and repair costs); and on trends in failure rates (for example, downtime during severe weather events). Given the extent of financial depreciation of the assets, this type of information would show, for example, whether it is becoming more costly to maintain the assets due to unscheduled maintenance and repair, and whether trends indicate an imminent crisis.
- 2.27 The Department's latest long-term capital plan expired in the 2004–05 fiscal year. We noted that since its expiry, the Department has been working to conform to the Treasury Board's 2007 approach to capital planning under its policy Investment Planning—Assets and Acquired Services, which the Department calls integrated investment planning (IIP). This approach is aimed at ensuring that all investment proposals from across the Department are ranked by priority and risks and fit within the allocated funding levels. At the time of our audit, it

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Radar Station, Franktown, Ontario

was unclear whether this plan would help resolve the investment issues of the monitoring networks. The Department expects to obtain approval of this new capital plan in 2008.

- **2.28 Network management.** We examined operational aspects of three networks that are important for forecasting severe weather: radar, surface, and upper air. Each of these networks is at a different level of implementing a life cycle management approach in its operations.
- **2.29** Environment Canada considers radar a critical tool for predicting severe weather. The Department reports that in-house development of the existing Doppler radar network began in 1998 and was completed in 2004 for about \$40 million in total direct and indirect costs.
- 2.30 When the current radar network (Exhibit 2.3) was completed in 2004, life cycle management expectations were not fully documented. A draft network operations and procedures manual has since been prepared that outlines life cycle management requirements, but not all of the requirements outlined in the manual are in place. For example, the manual requires reports on the performance of the network (such as hours of downtime and percentage of failures due to specific components), as well as reports on maintenance and repairs. Although a national radar information system contains information on individual radar sites, including maintenance logs, the system is not being used to produce these required reports in a consistent or systematic manner.

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Exhibit 2.3 Canada's radar network plays an important role in forecasting severe weather

Source: Environment Canada

- 2.31 Department officials are concerned that the assets of the national radar network are being managed in a reactive manner and that operating and investment decisions are being made based on existing funding levels, not the needs of the network. For the past two fiscal years, management has been asked how to respond to budget reductions, not what is required to properly manage the network with a life cycle approach. In 2007, the Department decided to reduce scheduled radar maintenance visits from six a year to four. This decision was based on the goal of reducing costs, not on an analysis of the network's performance showing that maintenance was greater than required and could be reduced with minimal risks.
- 2.32 Stable life cycle management of the network, including maintenance, repair, and replacement decisions, is being hindered by several deficiencies. These include a reactive approach to managing the network, the lack of documented life cycle management expectations, and the lack of consistent and systematic tracking and reporting of the network's performance. The absence of proper systematic information hampers good management, particularly when there is high turnover in personnel and loss of corporate memory. We noted that since 2004 there have been four national managers of the radar network.
- 2.33 Environment Canada manages almost 700 surface weather observation stations and more than 300 reference climate stations. In order to have the information necessary to manage the Department's surface network, a station information system is in place that records data on the network, such as the maintenance history of individual stations. However, the system does not contain data such as failure rates and percentage of failures due to specific components, which would be useful for managing inventory and making informed decisions about preventive maintenance, repair, and replacement. The Department has set standards for the number of preventive maintenance visits required per station per year, but it is currently not able to meet them.
- 2.34 To ensure a properly functioning network, Environment Canada, using industry standards, estimated in 1998 that 10 percent of the Department's surface weather stations need to be replaced every year. The Department's analysis shows that it has not kept pace with this replacement rate, and as a result there is a growing backlog in the number of stations that need to be replaced—about 50 stations since the 2002–03 fiscal year when they identified about 235 for replacement. The Department also noted that with the use of new electronic components with short life spans at its monitoring stations, the life expectancy of some monitoring equipment may be less than 10 years and, therefore, its replacement rate may be greater than

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Upper air station and training facility, Stony Plain, Alberta

Source: Photo courtesy of Lee Suddick, Meteorological Service of Canada 10 percent per year. It is important that the Department track the performance of its stations over time to ensure that its 10 percent replacement rate is appropriate and that its backlog estimate is accurate.

2.35 The upper air network consists of 31 stations. Twice daily, radiosondes (devices that track variables such as temperature, humidity, wind speeds, and wind direction) are launched at these stations, using helium-filled balloons. The upper air network has implemented several key elements of a life cycle management approach. For example, the performance of the network, including measures such as the number of scheduled flights that occur and height achieved, is tracked and compared with targets on a regular basis. Common problems affecting performance are also identified, tracked, and responded to regularly. Environment Canada recently signed a new long-term contract with an equipment supplier, providing the network with a degree of stability for the supply of parts.

2.36 Recommendation. Environment Canada should document and implement the policies, systems, and procedures necessary to support its commitment to full life cycle management of its monitoring network assets.

The Department's response. Environment Canada agrees with this recommendation and has already taken concrete steps toward this goal. The surface weather, radar, and upper air networks were ISO (International Standards Organization) 9001 certified in 2007, which means that systems and processes are in place to ensure effective management of the networks, as verified by regular and successful internal and external audits. Our ISO certification also requires that performance measures be collected and analyzed to improve effective planning for the maintenance of these assets. The result is a dynamic risked-based life cycle management approach that ensures the health of the networks while respecting resource realities.

Environment Canada will continue to improve its procedures through the Department's new integrated investment planning (IIP) process. The condition of the current assets will first be assessed through the development of an Asset Condition Index (ACI), to be completed before fiscal year 2009–10. Performance measures generated through our ISO processes will provide the basis for ongoing assessment of network and component performance, and will guide ongoing life cycle investment planning through the IIP process.

There is no up-to-date strategy to address challenges in managing the monitoring network

- 2.37 In addition to the challenge of implementing life cycle management in a context of limited resources, Environment Canada has identified other challenges in managing its monitoring network. It currently has low network density (particularly in the North) and relies extensively on a number of partners for its monitoring data.
- 2.38 Environment Canada considers the density of its monitoring coverage in Canada to be sparse compared with international standards, especially for monitoring coverage in the North. Increasing interest in development of the North and the federal government's priority to create a greater Canadian presence in the region make the monitoring of weather and environmental conditions in the North more important. On-site monitoring is also essential for forecasting local weather conditions and would be useful for ensuring that forecasters have a complete picture of the weather conditions that may influence the weather in southern Canada. The North is one of the priorities of the Weather and Environmental Services Board, and the Board is considering options for enhanced services in this region.
- 2.39 Partnerships are important to Environment Canada's monitoring function. The Department relies on a number of organizations for monitoring data, including other federal departments and provincial governments. These relationships are reciprocal, as the monitoring partners rely on, and benefit from, Environment Canada's modelling expertise and forecasting services. Changes in the nature of these relationships can have impacts on the amount and type of data that Environment Canada receives and the expertise and services that it provides. Adequately identifying and managing risks to these relationships is important to ensure that the partnerships succeed.
- 2.40 For example, NAV CANADA (NAVCAN) is an important partner. Under their current contract ending in 2011, NAVCAN relies on Environment Canada for aviation-forecasting services; for its part, Environment Canada obtains important weather data (that it uses for its aviation and other forecasts) from the some 240 weather observation stations at airports across Canada that it maintains on a contract basis for NAVCAN. Environment Canada also has more than 100 climate monitoring stations located at airports. During our audit, NAVCAN was considering a number of options for its weather observation stations that could change the relationship it has with Environment Canada. Environment Canada officials informed us that they were negotiating a number of issues with NAVCAN about the future of this important partnership.

- 2.41 As indicated, Environment Canada faces various challenges in managing its monitoring networks, and it has been working on implementing department-wide integrated investment planning (IIP). However, it has not prepared and approved a long-term strategy and capital plan for its monitoring assets, consistent with its corporate strategies and IIP priorities, to deal with these challenges. Such a strategy and plan, and the analysis to support them, would strengthen the Department's ability to assess and communicate the extent of its current and future capacity to meet its challenges and take advantage of opportunities.
- **2.42** Recommendation. Environment Canada should prepare a fully costed long-term strategy supported by a capital plan for its monitoring networks. The strategy and plan should be consistent with life cycle management and linked to the Department's approved strategies, priorities, and integrated investment planning.

The Department's response. Environment Canada agrees with this recommendation. The Department is developing a fully costed business case that will incorporate a monitoring strategy and long-term capital plan within the Treasury Board's new integrated investment planning (IIP) process that will support Environment Canada's mandate in severe weather and climate monitoring. As outlined in the response to the previous recommendation (paragraph 2.36), the Asset Condition Index (ACI) and ongoing performance measures collected through International Standards Organization (ISO) processes will be fully integrated with and inform this process. Environment Canada will work to identify the ongoing resources to support this strategy in fall/winter 2008–09. From an asset-integrity perspective, investments will be prioritized taking into consideration the condition (as identified by the ACI) and the performance of the asset.

Implementation of the Kinfo workstation

The Department is implementing a modern forecasting system for its storm prediction centres

- 2.43 In 2000, Environment Canada recognized that its meteorological forecasting tools were not standardized across the country, were difficult to maintain, and needed to be replaced. Within this context, the Department began to identify and assess possible options for replacing its forecasting tools.
- **2.44** We interviewed Environment Canada officials and reviewed documentation to determine if the Department was implementing the NinJo forecaster workstation according to plans and consistent with its objectives. We expected that Environment Canada was following good

practices, such as considering user needs, risks, and the strengths and weaknesses of different alternatives, while assessing potential solutions for replacing its forecasting tools. We found that the Department carried out an adequate assessment of various solutions. Its assessment covered forecaster workstations being used by meteorological offices in the United States, the United Kingdom, Germany, and France, as well as the option of building a new system in-house. Based on its assessment, Environment Canada decided to adopt the NinJo workstation.

- 2.45 NinJo is an advanced computer workstation for forecasters. By manipulating and overlaying various types of data, NinJo allows forecasters to visualize and assess meteorological conditions more efficiently. An international consortium founded in 2000, which consists of the national meteorological services of Germany, the German military, Switzerland, Denmark, and Canada, is developing the workstation. The other members of the consortium have recently implemented NinJo for their meteorologists.
- 2.46 Environment Canada considers NinJo to be cutting-edge technology that will help forecasters better analyze and forecast severe weather. Given the importance of the storm prediction centres to severe weather forecasting and the need to replace its current forecasting tools, the Department considers the timely and successful implementation of NinJo to be critical to the work of meteorologists at storm prediction centres.
- 2.47 Environment Canada estimates that NinJo should provide the Department with considerable long-term benefits for the amounts being invested. When Canada joined the consortium in 2003, NinJo was already in development. Canada was asked to pay only a limited amount of the previous development costs, and it agreed to contribute at least two full-time equivalents per year to the development of the workstation in areas where it had recognized expertise. Environment Canada expected Canada's implementation to be more complex, as it estimated that it had a higher degree of automation than its partners to integrate on NinJo.

Project management has weaknesses

2.48 While recognizing that Environment Canada is working within the consortium's project development environment, we expected that the Department would have adequate systems in place to plan for and implement the NinJo workstation in Canada. We interviewed department officials and reviewed documentation to determine if a project plan was prepared that defined the project's Canadian scope

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and outlined expected outcomes, timelines, and costs. We also examined project documentation to verify that plans were in place to guide implementation of the workstation and that monitoring and reporting were being done.

- 2.49 We found certain weaknesses in project management that may impede the timely implementation of NinJo in Canada. Although Environment Canada has a draft project charter, it lacks an approved overall project plan. Thus, it is unable to compare actual costs against any original commitments. The Department estimates that since the 2003–04 fiscal year, it has invested close to \$11 million in NinJo.
- 2.50 According to its initial timelines, Environment Canada planned to have NinJo implemented and begin retiring existing software by the end of 2004. In 2006, the Department revised this target to the end of 2007 or early 2008, and it assigned a project manager to the NinJo project, who prepared a plan for deploying the first phase of NinJo into forecast operations. The Department also developed a training plan and online training modules. At the end of our audit, the target for implementation was the fall of 2008, with full retirement of existing software estimated to be three to five years away. In the fall of 2007, an internal NinJo steering committee was established to oversee Environment Canada's involvement in the consortium and implementation of the workstation. Under this guidance, the Department has only recently begun to prepare the portion of a longer-term project plan that covers retirement of existing software, full implementation of NinJo, and the expected costs.
- 2.51 Recommendation. Environment Canada's NinJo steering committee should ensure that clear timelines and deliverables with assigned accountabilities are established for the successful and timely implementation of the NinJo workstation at Environment Canada. Resource requirements for fully implementing and maintaining NinJo over the longer term should also be clearly identified and tracked on a regular basis.

The Department's response. Environment Canada agrees with this recommendation and has already taken steps toward its implementation. Recognizing that forecaster systems are complex and cannot be bought off the shelf, there has been significant leverage and cost-savings benefits to Canada in working with three other national meteorological services in the design and development of the NinJo workstation. Environment Canada is exercising its project effectiveness through active departmental planning and strong leadership on the International Consortium Steering Committee. Internally, the Department has established its own governance structure to oversee the development

and implementation of the project, and has a plan with clear timelines, deliverables, and associated accountabilities that identify December 2008 as the target date for the systems to be operational in the storm prediction centres. Furthermore, the Department has identified and committed to the ongoing resource requirement of 10 FTEs (full-time equivalents) and \$300,000 for operations and maintenance for continued development and maintenance of the system. Life cycle management and capital replacement will be addressed through the departmental integrated investment planning (IIP) process. The Department will annually review these requirements and adjust accordingly.

The International Consortium Steering Committee is also committed to developing a long-term NinJo strategy by the fall of 2009. This strategy, which will be discussed and adopted by all consortium partners, will provide long-term direction to Environment Canada's efforts in this area.

Delivery of severe weather warnings

Environment Canada is consulting with selected user groups

- 2.52 We expected that Environment Canada was making opportunities available to the public and client sectors, such as emergency response officials, to provide feedback on their needs for severe weather warnings, and that such feedback was being used to improve the Department's delivery of severe weather warnings.
- 2.53 We found that Environment Canada has begun to assess user needs for severe weather warnings. The Department established four national service offices that use a variety of methods, including workshops, meetings, surveys, and case studies, to better understand the needs of key recipients of severe weather warnings. These recipients include, for example, municipal officials responsible for operations and maintenance, as well as users in sectors such as agriculture, energy, marine transportation, and ground search and rescue.
- 2.54 The Department has also created a National Inquiry Response Team (NIRT) that handles public inquiries on all weather topics. The team categorizes the inquiries it receives and routinely directs them to relevant officials within the Department for their information and/or action. We found that with the exception of the NIRT initiative, the Department could not demonstrate that the feedback from users of severe weather forecasts is being used to improve the delivery of severe weather warnings.

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A variety of tools are used to deliver severe weather warnings

- 2.55 We expected that Environment Canada was considering best practices for the communication tools it uses to deliver severe weather warnings. We found that the Department uses a number of tools to deliver severe weather warnings, including its website (www.weatheroffice.gc.ca), Weatheradio, automated telephone weather information service, and fee-based one-on-one consultation services. The Department also counts on the broadcast media to deliver its severe weather warnings.
- **2.56** In the past year, Environment Canada has also begun taking advantage of newer technologies by providing forecasts and warnings through the Government of Canada Wireless Portal and through Really Simple Syndication (RSS)—an Internet-based tool for distributing frequently updated information.
- 2.57 Environment Canada's weatheroffice.gc.ca website is the federal government's most frequently visited website. This website is an example of a pull technology where users request information such as severe weather warnings from the website. Currently, Environment Canada's only push technology, where severe weather warnings are proactively sent to users without their having to request the information, is Weatheradio. According to a 2007 departmental public survey, less than 10 percent of respondents had used Weatheradio.
- **2.58** We noted that the Department does not have a strategy for delivering severe weather warnings, which would include a mix of push and pull technologies that it wishes to use both now and in the future. Without this type of strategy, it has not set priorities among its tools or made commitments to their longer-term funding.

There is no national public alerting system

2.59 A public alerting system results in severe weather warnings (as well as other warnings such as terrorist threats or environmental emergencies) being broadly communicated over all radio and television stations and sent to mobile devices such as cellular phones. Such a system does not currently exist across Canada. Environment Canada has supported efforts toward mandatory broadcasting of warnings. It is also cooperating with other federal departments as well as provincial and territorial governments and industry stakeholders toward creating a national public alerting system for all types of emergencies. Its role would be to provide severe weather warnings to an eventual system.

Push and pull technologies—Delivery tools that broadcast or send messages and information, such as severe weather warnings, to users.

Push technologies send (push) information directly to users without their having to request it. An example is Environment Canada's Weatheradio, where the user purchases a special receiver that can be programmed to alert them when a warning is issued for their area.

Pull technologies rely on users to request information. Examples are Environment Canada's weatheroffice.gc.ca website and its automated telephone weather information service.

2.60 Recommendation. At the same time as it works with the lead federal department and other government departments in the creation of a national public alerting system, Environment Canada should develop a costed strategy to improve the effectiveness of its own "push" technologies in order to increase the reach and effectiveness of its weather warnings.

The Department's response. Environment Canada agrees with this recommendation and recognizes that "push" technology is critical in "short-fused" dangerous situations—such as severe thunderstorms and tornadoes—in ensuring that people receive a warning in time to take action to protect themselves. Integral to the Department business case being completed this fall/winter 2008–09 will be a comprehensive service delivery strategy that will include measures to improve the effectiveness of the existing Weatheradio system, as well as leverage new wireless messaging technologies to issue warnings to Canadians in a timely fashion. Based on the decisions from this business case, the Department would be better positioned to continue to work with other federal departments, the provinces and territories, as well as industry stakeholders on the creation of a national public alerting system. In particular, Environment Canada would work with Public Safety Canada, who has the lead on the creation of a national public alerting system.

Verification of severe weather warnings

- 2.61 Environment Canada reports that it issues more than 10,000 severe weather warnings across Canada per year. These warnings are considered the most important product among weather services, as they contribute directly to the Department's objective of enabling the public to protect their safety and well-being. The Department has made commitments to improve the timeliness and accuracy of its warnings. Verifying the accuracy and timeliness of these warnings would allow Environment Canada to better understand their quality and to determine whether its performance is improving over time. The Department could also use the results of verification to improve its science and forecasting process and therefore the performance of its warning program. Publicly reporting on the quality of its severe weather warnings would strengthen Environment Canada's accountability and may increase users' confidence in the warnings they receive.
- 2.62 Verifying severe weather warnings can be challenging for a variety of reasons. For example, warnings may be issued for specific forecast regions lacking surface weather observation stations that could provide verification data. Severe weather events, particularly severe summer storms, can be small-scale and highly localized, appearing and dissipating quickly.

There is no national verification approach or program

- 2.63 We expected that Environment Canada was verifying the quality of its severe weather warnings. Based on interviews with department officials responsible for forecasts, warnings, and performance measurement; interviews with regional forecasters; and a review of verification reports, we found that there is no national program or approach for verifying severe weather warnings and assessing Environment Canada's overall performance in delivering them. This information is important as it would help Environment Canada know how good a job it is doing across Canada, whether its current performance meets its own and users' expectations, and whether it needs to improve its services and increase investment in areas such as monitoring and delivery.
- 2.64 Environment Canada has established a national verification program for its public and aviation forecasts and has made some effort to develop a national program for verifying severe weather warnings. The Department produced a draft report in 2006 analyzing the accuracy and timeliness of summer severe weather watches and warnings across Canada from 2001 to 2003. However, the report was never finalized, as resources were redirected from this initiative to other priorities in the Department.
- **2.65** In three of the four regions we examined, we found some recent verification of severe weather warnings. On an ad hoc basis, the verifications checked a variety of indicators, such as warning lead-time, forecast accuracy, false alarms, and probability of detection of events. While the approaches used were not consistent among regions, these efforts, along with the Department's national program for verifying public forecasts, could be used as the basis for a national program for verifying severe weather warnings.
- **2.66** Recommendation. Environment Canada should establish and implement a national program for verifying the quality of severe weather warnings throughout the year.
- The Department's response. Environment Canada agrees with the spirit of this recommendation. A full comprehensive verification system would be expensive and likely not cost-effective. Instead, the Department is in the process of finalizing the implementation of a Quality Management System, registered to ISO 9001, which provides the building blocks for a holistic, realistic, and affordable approach regarding program and product verification and quality measurement. The Department is committed to implementing an appropriate mix of measures to understand the performance of its warnings, and there are

already efforts under way to improve the consistency of the scientific verification of its warnings. However, the cost, complexity, and scientific challenges of developing and implementing such a system warrants analysis in the context of all other available means of performance measurement that may prove more effective and affordable.

This analysis will be undertaken in fall/winter 2008–09 and will result in the development of costed options to implement a comprehensive performance monitoring and measurement system. This system will have the appropriate mix of scientific verification and information gathering, such as the post-event studies conducted through the Warning Preparedness Meteorologist program (as described in our response to the recommendation in paragraph 2.74) and through Public Opinion Research—both representing critical methods to determine the effectiveness of the warning program.

Environment Canada is taking steps to determine how well severe weather warnings inform Canadians

- 2.67 Ensuring that severe weather warnings are delivered in a timely fashion and sufficiently understood by users to allow them to take appropriate action can be challenging. For example, when a forecaster issues a warning of 100 kilometres-per-hour winds, certain questions arise; for example: Is the warning reaching those it should and do recipients of the warning understand the implications of winds that strong? Should the Department be providing more information on potential impacts, such as the risk of trees losing branches and roofs being damaged?
- **2.68** To improve its capacity to answer these types of questions, Environment Canada is taking steps to determine how effectively severe weather warnings are informing Canadians. It has conducted national public opinion surveys that capture data on a variety of topics, including public views on whether summer and winter severe weather warnings are clear and provide sufficient notice to prepare for approaching storms.
- 2.69 Storm surveys. After certain significant storm events, teams of warning preparedness meteorologists and outreach officers have conducted storm surveys. The purpose of these surveys is to confirm the nature of the event (for example, whether it was in fact a tornado as predicted); they may also identify issues such as the effectiveness of communications between Environment Canada and the media and emergency measures organizations. In addition, reports on severe weather events assess issues such as the performance of numeric model

predictions and forecasts, together with the warnings issued by storm prediction centres. Although the Department currently conducts storm surveys and case studies on an ad hoc basis, it is considering developing a Forensic Storm Investigation program that would add more rigour and consistency.

- 2.70 Case study in B.C. In 2007, the Department carried out a case study that focused on how well it informed key people (specifically, emergency measures organizations and municipal officials) and how effectively the local emergency management officials received and understood the severe weather warnings. The study reviewed three severe weather events that occurred in 2007 in the British Columbia interior. It concluded that the storm prediction centre had done little to inform end users of the potential consequences or impacts of the impending storms and that this type of information could have led to more informed risk reduction strategies by local officials.
- 2.71 The study also concluded that although the timeliness and accuracy of warnings are important, the clarity of the message is also important. If users do not understand the potential impacts and hazards associated with the forecasted severe weather event, they may not take the necessary precautions to protect themselves and minimize risks to persons and property. The Department initiated a similar case study in the spring of 2008, focusing on severe winter storm events in Quebec.
- 2.72 Warning preparedness meteorologists. Properly informing Canadians of impending severe weather conditions can help minimize the impacts of these events. To enhance this type of information, Environment Canada established 11 positions for warning preparedness meteorologists. They help communities prepare for and respond to severe weather by establishing a rapport and liaising with the media and emergency measures organizations at the provincial and local levels before, during, and after severe weather events. To facilitate access to these meteorologists, Environment Canada established a dedicated telephone line for the media and will have additional meteorologists assist during severe weather events or on-call if there is a high probability of a severe weather event.
- 2.73 The Department has received a lot of positive feedback on the services provided by warning preparedness meteorologists; at the same time, it has identified instances of some concerns about their accessibility, expressed in the post-storm surveys and case studies that it conducted. The Department has not set clear performance goals for their work, such as level of responsiveness. Thus, despite the numerous

activities carried out by these meteorologists, it is difficult for the Weather and Environmental Services Board to know whether the Department's and users' expectations are being met.

2.74 Recommendation. Environment Canada should regularly assess the effectiveness of severe weather warnings from a user's perspective, especially the effectiveness of the methods of delivery to users and how well the warnings are understood by key users and the public.

The Department's response. Environment Canada agrees with this recommendation and has already undertaken measures toward meeting this goal. The Department acknowledges that the full measure of the effectiveness of its warning programs can only be understood with an appropriate mix of monitoring and measurement tools (see our response to the recommendation in paragraph 2.66), including Public Opinion Research and case studies of what action people have taken in response to warnings.

The Warning Preparedness Meteorologist program consists of highly specialized communication and outreach meteorologists who focus on providing emergency prevention support to Emergency Measures Organizations (EMOs) across Canada. This efficient and flexible program delivers effective information and advice during emergency situations. EMOs and the media have indicated on many occasions that they are satisfied with the support they are getting from Environment Canada.

Additionally, Public Opinion Research is used annually as an efficient way to assess the effectiveness of current products, services, and programs in meeting the needs of both specific clients and the public, as well as in contributing to what the requirements may be for the development of different products and services.

Environment Canada is currently conducting a standards review of the criteria used to issue warnings from a user perspective and of how impact statements could be included with the warnings to improve the action taken by citizens in response. Recommendations are expected from this analysis by spring 2009.

Strategic direction

2.75 Given the changes over the last 10 years that have affected the weather services of Environment Canada (see paragraphs 2.9 to 2.12), we interviewed Department officials and reviewed relevant documentation to determine whether Environment Canada's weather and environmental services planning provides strategic direction and supports the current and future delivery of severe weather warnings to Canadians. We expected that Environment Canada had adequately

defined its mandate and role for providing severe weather services, had put in place a strategic planning process that enables the allocation of resources consistent with short- and long-term risks and priorities, and had developed statements for measurable results to guide department activities.

A new results structure is in place

- 2.76 The Weather and Environmental Services Board has defined its mandate as providing meteorological and environmental warnings, forecasts, information, and services enabling Canadians to make effective decisions regarding their health and safety, the economy, and the environment. In support of this mandate, Environment Canada has identified 48 program activity areas ranging from monitoring and forecasting meteorological and environmental conditions to delivering forecasts and warnings to users.
- 2.77 The descriptions of these activity areas and related expectations for results make it reasonably clear what Environment Canada is attempting to achieve with severe weather warnings. However, the Department has not yet established results-based service level standards that would allow it to better measure its performance related to weather and environmental services, including severe weather warnings, although it has indicated its intention to do so.

The long-term perspective has eroded

- 2.78 In 1999, the Meteorological Service of Canada produced a five-year business plan. The 2003 transition initiative, ending in 2008, also provided specific strategic direction for the organization. The Department has continued to rely on the relevant principles and general direction of those earlier documents for strategic guidance. However, since 2003, the organization's roles and responsibilities for providing weather services have changed considerably. In addition, a number of new risks and challenges have emerged.
- 2.79 The scope of Environment Canada's weather and environmental services and the results it wants to achieve for monitoring weather conditions and informing Canadians of severe weather events are broad and ambitious. At the same time, as we note in this chapter, the Department is facing a number of significant challenges to maintain and improve its weather services related to severe weather warnings, including the following:
 - establishing a national system for verifying the effectiveness of its severe weather forecasts;

- implementing the reorganization of weather-related functions, including the centralization of information technology services and research and development, and establishing clear lines of accountability;
- delivering weather services with the Department's current capacity—that is, addressing the need for reinvesting in its weather and climate monitoring networks, developing alternatives for delivery tools, and enhancing its ability to provide services to Canada's North;
- implementing life cycle management of its monitoring networks in a context of limited resources;
- addressing the risks related to the Department's current strategy of relying on opportunities to partner with others—for example, the potential withdrawal of one of its key partners;
- implementing its modern workstation for forecasters; and
- delivering clear severe weather warnings efficiently and effectively using an appropriate mix of push and pull technologies (see definition on page 19).

2.80 The collection of weather and climate data and the provision of severe weather forecasts are critical to Canada as a member of the international community and as a G-8 economy. The Weather and Environmental Services Board has identified some of its risks and challenges and has set program priorities for the 2008–09 fiscal year. Procedures are also being established to identify short-term priorities for the fiscal year in areas such as capital planning and information technology. In addition, we noted that the Meteorological Service of Canada is taking steps to develop a vision and a renewed strategic direction for Environment Canada's weather and environmental services. Nevertheless, the Department currently has no up-to-date documented strategy to communicate how it will address the longerterm challenges, provide direction for charting a clear course of action, set focused priorities and defined accountabilities under the new organizational arrangements, and identify resource requirements and their potential sources. Nor has it conducted a thorough risk assessment or analyzed the implications for the whole Department and the country of its current actions related to the challenges it faces in this area. If its recent visioning and planning efforts for providing weather services result in an approved and documented strategy, the Department will be able to demonstrate accountability and support its requests for funding while enhancing public confidence in its ability to deliver high-quality severe weather warnings to Canadians in the future.

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2.81 Recommendation. Environment Canada should establish and document an updated long-term strategy for its weather and environmental services. The strategy should address identified long-term risks, link to departmental strategies, and reflect verification results related to the usefulness, timeliness, and accuracy of severe weather warnings across Canada. The strategy should also include clear expectations for results and be updated on a regular basis to reflect changing priorities, evolving partnerships, and technological advances.

The Department's response. Environment Canada fully agrees with this recommendation. Long-term strategic plans were developed and implemented in 1999 and 2003. In December 2007, Environment Canada reinitiated a process to renew its vision and strategic direction for weather and environmental service delivery over the next decade by identifying key drivers, challenges, risks, and opportunities. This initiative will lead to a new strategic direction and a business case in fall/winter 2008–09 to support the requirement for new investments.

Conclusion

- 2.82 Environment Canada's systems and procedures do not adequately support the delivery of timely and accurate severe weather warnings to Canadians. Although it currently delivers a large number of severe weather warnings, it lacks the information necessary to know the condition of its monitoring assets and whether the warnings are complete, timely, or accurate. As a result, Environment Canada is unable to tell Canadians how well they are being served or what improvements are needed to effectively provide this service in the future.
- **2.83** We examined operational aspects of three networks that are important for forecasting severe weather: radar, surface, and upper air. Although Environment Canada has made a commitment to a life cycle management approach for its monitoring networks, it has not succeeded in implementing this approach.
- **2.84** The Department's selection of NinJo, a new advanced forecaster workstation that is shared with several European countries and designed to replace the tools currently being used, followed an adequate process. The Department expects that, when implemented, the workstation will provide significant long-term benefits for the amounts being invested.

- 2.85 In addition to relying on the broadcast media, the Department uses a number of tools to deliver severe weather warnings to Canadians, such as the Internet and Weatheradio—a tool that can be used to automatically alert users of severe weather warnings. It has also begun exploring the use of newer technologies, such as the Government of Canada Wireless Portal. However, it has not defined where it intends to focus its delivery efforts.
- 2.86 There is no national program or approach for verifying the quality of severe weather warnings and assessing Environment Canada's performance for delivering them. This information is important, as it would help the Department know whether its current performance for delivering severe weather warnings across Canada is reasonable, and whether it needs to improve its services and increase investment levels in areas such as monitoring and delivery.
- 2.87 Environment Canada faces a number of fundamental risks and challenges in providing weather services, including those related to severe weather, but its planning function does not provide adequate support, as it has not established up-to-date long-term strategic and capital plans for guiding its decisions.

About the Audit

Objective

Our audit objective was to determine if Environment Canada's systems and procedures adequately support the delivery of timely and reliable severe weather warnings to Canadians. This included determining if Environment Canada is

- using a planning function that provides strategic direction for the current and future delivery of severe weather warnings to Canadians;
- managing the physical assets of its weather observation network using a life cycle management approach, consistent with its objectives for providing severe weather warnings to Canadians;
- implementing the NinJo forecaster workstation according to plans and consistent with its objectives;
- verifying the quality of its severe weather warnings and using this information to improve forecasting of severe weather events; and
- making opportunities available to users to provide feedback on their needs for severe weather
 warnings, and considering such feedback and best practices for delivery tools used in all regions of
 Canada to improve delivery of severe weather warnings.

Scope and approach

We examined Environment Canada's management of its weather observation network, the implementation of a new, advanced forecaster workstation called NinJo, and the delivery and verification of severe weather warnings. We also examined the Department's planning process that supports the current and future delivery of severe weather warnings to Canadians. The focus of our audit was the delivery of severe weather warnings to Canadians; we did not examine Environment Canada's public forecasting program or other weather and environmental services, such as those related to air quality, climate, or hydrometric services.

Our audit approach consisted of reviewing and analyzing key documents, files, and information systems, and interviewing managers and department leads within the weather and environmental services program of Environment Canada (including those responsible for weather monitoring, forecasting, performance measurement, and the delivery of severe weather warnings). We visited four of Environment Canada's five regions (Pacific-Yukon, Prairie-Northern, Ontario, and Quebec), met with forecasters and technicians, and visited two storm prediction centres. We also met with officials from the World Meteorological Organization, the United States National Weather Service, the German Meteorological Service, and MeteoSwiss.

Criteria

Listed below are the criteria that were used to conduct this audit and their sources.

Criteria	Sources	
Strategic Planning .		
For strategic planning, we expected that Environment Canada had	Treasury Board of Canada Secretariat, Management Accountability Framework (elements/indicators related to governance structure and effective planning function)	
 adequately defined its mandate and role for providing severe weather services, 		
developed measurable results statements to guide departmental activities, and		
 developed a strategic planning process that enables the allocation of resources consistent with risks and priorities. 		
Mon	itoring	
For its monitoring network, we expected that Environment Canada had a life cycle approach in place for managing its monitoring network.	 Treasury Board of Canada Secretariat, Policy Framework for the Management of Assets and Acquired Services, Section 3 	
	 Treasury Board of Canada Secretariat, Policy on Investment Planning—Assets and Acquired Services, Section 6 	
	 Treasury Board of Canada Secretariat, Policy on Management of Materiel, Section 6 	
	 Treasury Board of Canada Secretariat, Policy on Long-term Capital Plans, Section 5 	
N	іпЈо	

For the NinJo workstation, we expected that Environment Canada had selected the workstation based on adequate analysis, and put systems in place to adequately plan for and implement the workstation.

- Treasury Board of Canada Secretariat, Policy on Project Management (Policy Requirements)
- Treasury Board of Canada Secretariat, Policy on the Management of Projects, sections 3, 4, and 6

Verification

For the verification of severe weather warnings, we expected that Environment Canada was

- delivering severe weather warnings in a timely and accurate manner according to its own standards,
- · verifying the quality of its severe weather warnings, and
- · using information from the verification of the quality of severe weather warnings to improve forecasting of severe weather events.
- · World Meteorological Organization, Guidelines on Performance Assessment of Public Weather Services, Section 4
- · Treasury Board of Canada Secretariat, Preparing and Using Results-Based Management and Accountability Frameworks, Section 4 and Results for Canadians: A Management Framework for the Government of Canada

Criteria	Sources

Delivery

For the delivery of severe weather warnings, we expected that Environment Canada was

- making opportunities available to the public and client sectors to provide feedback on their needs for severe weather warnings, and considering such feedback in plans, reviews, or evaluations to help improve the delivery of severe weather warnings; and
- considering user needs and best practices for the delivery tools used in all regions of Canada.
- Treasury Board of Canada Secretariat, Policy on Communications of the Government of Canada (see Policy Statement and Requirements)
- Treasury Board of Canada Secretariat, Management Accountability Framework (elements/indicators related to external service delivery)

Audit work completed

Audit work for this chapter was substantially completed on 30 May 2008.

Audit team

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Appendix List of recommendations

The following is a list of recommendations found in Chapter 2. The number in front of the recommendation indicates the paragraph number where it appears in the chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation

Environment Canada's weather monitoring network

2.36 Environment Canada should document and implement the policies, systems, and procedures necessary to support its commitment to full life cycle management of its monitoring network assets. (2.19–2.35)

Environment Canada agrees with this recommendation and has already taken concrete steps toward this goal. The surface weather, radar, and upper air networks were ISO (International Standards Organization) 9001 certified in 2007, which means that systems and processes are in place to ensure effective management of the networks, as verified by regular and successful internal and external audits. Our ISO certification also requires that performance measures be collected and analyzed to improve effective planning for the maintenance of these assets. The result is a dynamic risked-based life cycle management approach that ensures the health of the networks while respecting resource realities.

Response

Environment Canada will continue to improve its procedures through the Department's new integrated investment planning (IIP) process. The condition of the current assets will first be assessed through the development of an Asset Condition Index (ACI), to be completed before fiscal year 2009–10. Performance measures generated through our ISO processes will provide the basis for ongoing assessment of network and component performance, and will guide ongoing life cycle investment planning through the IIP process.

2.42 Environment Canada should prepare a fully costed long-term strategy supported by a capital plan for its monitoring networks. The strategy and plan should be consistent with life cycle management and linked to the Department's approved strategies, priorities, and integrated investment planning. (2.37–2.41)

Environment Canada agrees with this recommendation. The Department is developing a fully costed business case that will incorporate a monitoring strategy and long-term capital plan within the Treasury Board's new integrated investment planning (IIP) process that will support Environment Canada's mandate in severe weather and climate monitoring. As outlined in the response to the previous recommendation (paragraph 2.36), the Asset Condition Index (ACI) and ongoing performance measures collected through International Standards
Organization (ISO) processes will be fully integrated with and inform this process. Environment Canada will work to identify

Recommendation	Response
	the ongoing resources to support this strategy in fall/winter 2008–09. From an asset-integrity perspective, investments will be prioritized taking into consideration the condition (as identified by the ACI) and the performance of the asset.

Implementation of the NinJo workstation

2.51 Environment Canada's NinJo steering committee should ensure that clear timelines and deliverables with assigned accountabilities are established for the successful and timely implementation of the NinJo workstation at Environment Canada. Resource requirements for fully implementing and maintaining NinJo over the longer term should also be clearly identified and tracked on a regular basis. (2.43–2.50)

Environment Canada agrees with this recommendation and has already taken steps toward its implementation. Recognizing that forecaster systems are complex and cannot be bought off the shelf, there has been significant leverage and cost-savings benefits to Canada in working with three other national meteorological services in the design and development of the NinJo workstation. Environment Canada is exercising its project effectiveness through active departmental planning and strong leadership on the International Consortium Steering Committee. Internally, the Department has established its own governance structure to oversee the development and implementation of the project, and has a plan with clear timelines, deliverables, and associated accountabilities that identify December 2008 as the target date for the systems to be operational in the storm prediction centres. Furthermore, the Department has identified and committed to the ongoing resource requirement of 10 FTEs (full-time equivalents) and \$300,000 for operations and maintenance for continued development and maintenance of the system. Life cycle management and capital replacement will be addressed through the departmental integrated investment planning (IIP) process. The Department will annually review these requirements and adjust accordingly.

The International Consortium Steering Committee is also committed to developing a long-term NinJo strategy by the fall of 2009. This strategy, which will be discussed and adopted by all consortium partners, will provide long-term direction to Environment Canada's efforts in this area.

Recommendation

Response

Delivery of severe weather warnings

2.60 At the same time as it works with the lead federal department and other government departments in the creation of a national public alerting system, Environment Canada should develop a costed strategy to improve the effectiveness of its own "push" technologies in order to increase the reach and effectiveness of its weather warnings. (2.52–2.59)

Environment Canada agrees with this recommendation and recognizes that "push" technology is critical in "short-fused" dangerous situations—such as severe thunderstorms and tornadoes—in ensuring that people receive a warning in time to take action to protect themselves. Integral to the Department business case being completed this fall/winter 2008-09 will be a comprehensive service delivery strategy that will include measures to improve the effectiveness of the existing Weatheradio system, as well as leverage new wireless messaging technologies to issue warnings to Canadians in a timely fashion. Based on the decisions from this business case, the Department would be better positioned to continue to work with other federal departments, the provinces and territories, as well as with industry stakeholders on the creation of a national public alerting system. In particular, Environment Canada would work with Public Safety Canada, who has the lead on the creation of a national public alerting system.

Verification of severe weather warnings

2.66 Environment Canada should establish and implement a national program for verifying the quality of severe weather warnings throughout the year. (2.61–2.65)

Environment Canada agrees with the spirit of this recommendation. A full comprehensive verification system would be expensive and likely not cost-effective. Instead, the Department is in the process of finalizing the implementation of a Quality Management System, registered to ISO 9001, which provides the building blocks for a holistic, realistic, and affordable approach regarding program and product verification and quality measurement. The Department is committed to implementing an appropriate mix of measures to understand the performance of its warnings, and there are already efforts under way to improve the consistency of the scientific verification of its warnings. However, the cost, complexity, and scientific challenges of developing and implementing such a system warrants analysis in the context of all other available means of performance measurement that may prove more effective and affordable.

This analysis will be undertaken in fall/winter 2008–09 and will result in the development of costed options to implement a comprehensive performance monitoring and measurement system. This system will have the appropriate mix of scientific verification and information gathering, such as the post-event

Recommendation Response

studies conducted through the Warning Preparedness Meteorologist program (as described in our response to the recommendation in paragraph 2.74) and through Public Opinion Research—both representing critical methods to determine the effectiveness of the warning program.

2.74 Environment Canada should regularly assess the effectiveness of severe weather warnings from a user's perspective, especially the effectiveness of the methods of delivery to users and how well the warnings are understood by key users and the public.

(2.67–2.73)

Environment Canada agrees with this recommendation and has already undertaken measures toward meeting this goal. The Department acknowledges that the full measure of the effectiveness of its warning programs can only be understood with an appropriate mix of monitoring and measurement tools (see our response to the recommendation in paragraph 2.66), including Public Opinion Research and case studies of what action people have taken in response to warnings.

The Warning Preparedness Meteorologist program consists of highly specialized communication and outreach meteorologists who focus on providing emergency prevention support to Emergency Measures Organizations (EMOs) across Canada. This efficient and flexible program delivers effective information and advice during emergency situations. EMOs and the media have indicated on many occasions that they are satisfied with the support they are getting from Environment Canada.

Additionally, Public Opinion Research is used annually as an efficient way to assess the effectiveness of current products, services, and programs in meeting the needs of both specific clients and the public, as well as in contributing to what the requirements may be for the development of different products and services.

Environment Canada is currently conducting a standards review of the criteria used to issue warnings from a user perspective and of how impact statements could be included with the warnings to improve the action taken by citizens in response. Recommendations are expected from this analysis by spring 2009.

Recommendation

Response

Strategic direction

2.81 Environment Canada should establish and document an updated long-term strategy for its weather and environmental services. The strategy should address identified long-term risks, link to departmental strategies, and reflect verification results related to the usefulness, timeliness, and accuracy of severe weather warnings across Canada. The strategy should also include clear expectations for results and be updated on a regular basis to reflect changing priorities, evolving partnerships, and technological advances. (2.75-2.80)

Environment Canada fully agrees with this recommendation. Long-term strategic plans were developed and implemented in 1999 and 2003. In December 2007, Environment Canada reinitiated a process to renew its vision and strategic direction for weather and environmental service delivery over the next decade by identifying key drivers, challenges, risks, and opportunities. This initiative will lead to a new strategic direction and a business case in fall/winter 2008-09 to support the requirement for new investments.

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Report of the Commissioner of the Environment and Sustainable Davelopment to the House of Commons—December 2008

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2008



Report of the

Commissioner of the Environment and Sustainable Development

to the House of Commons

DECEMBER

Chapter 3

Managing Environmental Programming— Agriculture and Agri-Food Canada



Office of the Auditor General of Canada



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Agriculture and Agri-Food Canada



Office of the Auditor General of Canada

The December 2008 Report of the Commissioner of the Environment and Sustainable Development comprises The Commissioner's Perspective—2008, Main Points—Chapters 1 to 5, Appendices, and five chapters. The main table of contents for the Report is found at the end of this publication.

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Chapter

Managing Environmental Programming
Agriculture and Agri-Food Canada

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.	

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Managing Environmental Programming

Agriculture and Agri-Food Canada

Main Points

What we examined

The Agricultural Policy Framework (APF) is a federal-provincial/territorial agreement that came into effect in 2003 to create a national approach to agriculture, with programming aimed at five areas ("chapters"): Business Risk Management, Food Safety and Quality, Science and Innovation, Environment, and Renewal. Although the agreement did not extend beyond 31 March 2008, agriculture ministers of the federal, provincial, and territorial governments agreed to continue existing programs for another year while new programs are developed under Growing Forward, which will replace the Agricultural Policy Framework.

Our audit examined whether Agriculture and Agri-Food Canada has managed the Environment Chapter of the Agricultural Policy Framework appropriately to achieve its objectives for environmentally sustainable agriculture. We also examined its reporting on the performance of the Environment Chapter. We looked at the development of the National Land and Water Information Service (NLWIS), a major information technology project that is important to the support of all programs within the Environment Chapter. Finally, we examined whether the Department used the lessons learned from the Agricultural Policy Framework in developing Growing Forward.

Why it's important

Canada's agri-food sector accounts for eight percent of the gross domestic product and generates \$130 billion in sales, including \$31 billion in exports. The sector employs one in eight Canadians and contributes to the economic base of many rural communities in Canada. The long-term prosperity of the agriculture industry depends on its ability to co-exist sustainably with the natural environment. However, agriculture has changed significantly in response to market demands, new production technologies, and larger, more intensive operations.

Recent studies show that stresses on the environment from agriculture have been increasing. At the same time, public awareness and concern about these effects is growing. Programs within the Environment Chapter of the Agricultural Policy Framework provide farmers with

access to information and resources in order to help them adopt farm management practices that benefit the environment.

What we found

- The Department does not know to what extent its environmental programs have improved the environment. Departmental reporting is limited because it does not monitor and report on program results beyond outputs, such as the number of completed water projects (for example, wells and pipelines). As a result, senior management cannot be certain whether programs are achieving their intended results and where improvements are needed. The Department has spent about \$370 million on environmental projects, but lacks sufficient data to demonstrate that action at the farm level has led to positive environmental change. In addition, agri-environmental targets in agreements with the provinces could not be measured by the planned end of the Agricultural Policy Framework, in March 2008, as the Department intended. Nevertheless, the beneficial management practices funded under AAFC's environment programs—for example, providing water sources for cattle away from streams—are supported by science, indicating that they will likely lead to positive environmental change. The Department is in the process of developing a modelling system to better understand the effects of its programs on the environment.
- The Department's allocation of operating resources among the Environment Chapter's contribution programs was not supported by adequate information. Nor could the Department provide us with complete information on the operating costs of each program. In addition, information the Department required delivery agents to submit was not consistent with the terms in the signed agreements. Nor was it clear how the Department used the information it did receive. As a result of slow progress in fixing problems in data from delivery agents, the Department prepared a disclaimer on the usability of the data—the primary source for reporting on the performance of its environment programs—until the data problems are fixed. Recently, the Department voluntarily joined a government initiative to improve program delivery that includes a plan to develop revised agreements and simplify program administration.
- The development of the National Land and Water Information Service (NLWIS) was poorly managed. This \$100-million, major Crown project fell behind schedule and had to be revised from original plans. Key decision makers and the Department's senior management were not involved to the degree expected for a project of this complexity. Participants had differing views of the project's goals. In addition, project management suffered from a lack of

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- expertise and continuity; roles and responsibilities were unclear; and project requirements were changed without appropriate approvals. Senior management approved an internal audit and an independent review of NLWIS. During our audit, steps were being taken to address problems identified by the audit and review.
- In preparing for the next generation of the APF, the Department carried out formal "lessons learned" reviews. It also consulted extensively with stakeholders, who provided valuable information for Growing Forward. In developing the APF, the Department had experienced serious delays in negotiating and signing agreements with the provinces and territories. Based on that experience, the Department should have anticipated that negotiation and consultation would take longer than expected for Growing Forward and to plan accordingly. When the APF was to end on 31 March 2008, the APF environment programs were extended for up to one year, in order to provide more time for the development of Growing Forward.

The Department has responded. The Department agrees with all of our recommendations. Its detailed responses follow each recommendation throughout the chapter.



Introduction

- 3.1 The mandate of Agriculture and Agri-Food Canada is to provide policies, programs, and services to clients in the sector, and conduct research targeted to achieve security of the food system, the health of the environment, and innovation for growth.
- **3.2** Responsibility for agriculture is shared between the federal government and provincial and territorial governments and, as a result, these governments often share the costs of delivering programs. This creates a challenging set of circumstances in which to develop policy frameworks and environmental programs.
- 3.3 The Department supports Canadian agriculture through the Agricultural Policy Framework (APF), a five-year, \$5.2-billion joint federal—provincial/territorial agreement to provide policies and programs to enhance the agricultural sector's long-term profitability, competitiveness, and sustainability. The APF, implemented in 2003, represented a significant change in the Department's approach to the agriculture sector. It was the first-ever attempt by federal, provincial, and territorial governments to develop a national approach to agricultural policies and programs. This represented a significant challenge for the Department, as agreements for governance mechanisms, funding arrangements, and program details had to be negotiated and implemented for all areas of the APF.
- 3.4 The APF is made up of five areas or "chapters":
 - Business Risk Management,
 - Food Safety and Quality,
 - Science and Innovation,
 - Environment, and
 - · Renewal.

Programs under the APF are in place, in partnership with provincial and territorial governments, with some delivered by stakeholder groups.

\$600 million over five years, is designed to improve the health of the environment through increased adoption of sustainable development practices. According to the Department, in the context of Canadian agriculture and agri-food production, sustainable development means producing, processing, and distributing agricultural products in a manner that supports or enhances the high quality of life we enjoy in Canada, both today and into the future.

- The Department asserts that environmentally sustainable 3.6 agriculture will be achieved through accelerating efforts to reduce agricultural risks to the environment, which will benefit Canada's water resources, soil, air, and biodiversity. The APF Environment Chapter programs are designed to provide farmers with resources and information that encourage and facilitate practices to reduce agrienvironmental risks. The APF uses incentives and information rather than regulations. This means that producers are encouraged to adopt environmentally friendly agricultural practices, by being made aware of the issues and possible solutions and by being partially reimbursed for their costs.
- 3.7 The Department's National Agri-Environmental Health Analysis and Reporting Program (NAHARP) measures changes in environmental conditions on agricultural landscapes across Canada. The most recent information from NAHARP, which precedes the APF, shows that changes in the agricultural landscape over a 20-year period (1981 to 2001) have resulted in increased environmental risks in some areas and decreased risks in others.

Focus of the audit

- The objective of our audit was to determine whether Agriculture and Agri-Food Canada could demonstrate that it was managing the Environment Chapter of its Agricultural Policy Framework (APF) to achieve its environmentally sustainable agriculture objectives.
- 3.9 The APF is in transition as the Department develops its next generation of policies and programs, entitled Growing Forward. We looked at the overall development process for Growing Forward, as the process followed by the Department was the same for all of the chapters, including the Environment Chapter.
- 3.10 We then focused solely on the APF Environment Chapter. We examined the Department approach to managing the chapter's contribution programs. We did not examine the delivery of programs by provincial and non-provincial delivery agents, nor the payments made to these organizations.
- 3.11 To determine whether the performance measurement strategy for measuring and reporting of results was operating as intended, we examined the Department's Results-Based Management and Accountability Framework, departmental performance reports, and internal performance reporting.

- 3.12 Finally, we examined one key program within the Environment Chapter: the National Land and Water Information Service. We wanted to determine whether this \$100-million information technology project had been appropriately managed.
- 3.13 More details about the audit objectives, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendations

Agricultural Policy Framework and its successor

3.14 In 2005, Agriculture and Agri-Food Canada began a process to develop a policy framework that would follow the Agricultural Policy Framework (APF) when it was expected to end on 31 March 2008. As of April 2008, this new policy framework, now entitled Growing Forward, was still under development and the federal, provincial, and territorial ministers announced a continuation of APF programming for up to one year.

Analytical exercises were conducted

- **3.15** The Treasury Board of Canada Secretariat's Management Accountability Framework sets out its expectations of senior public service managers for good public service management. One of these expectations is to encourage continuous learning and improvement.
- **3.16** We expected the Department to have a lessons-learned process whereby it learned from the APF's strengths and weaknesses and applied those lessons to the development of Growing Forward. We found that the Department used lessons learned from the APF to identify opportunities to improve program management and administration.
- **3.17** To measure the APF's achievements, and to define the policy and program framework for Growing Forward, the Department undertook three formal analytical exercises. These were
 - a lessons-learned initiative,
 - · an evaluation of the Environment Chapter, and
 - extensive stakeholder consultations.
- 3.18 The lessons-learned initiative was designed as a high-level assessment of the APF's various administrative, management, and implementation aspects. It was based on input from staff involved in the APF. The initiative identified what worked well and what required

improvement. Documentation provided by the Department indicates that steps are being taken to implement identified improvements.

- 3.19 The evaluation of the APF Environment Chapter, conducted during the 2006-07 fiscal year, was intended to assess the programs' rationale and relevance, effectiveness of design and delivery processes, progress on results, and cost-effectiveness. The evaluation noted the slow uptake of the programs (the increase in the number of producers using the programs), and that the number of projects funded by the programs that were completed as at 31 March 2006 fell short of targets. However, by 31 March 2008, departmental records indicate that program use was close to the Department's targets, ranging from approximately 75 to 95 percent, for most of the programs.
- 3.20 In preparing for Growing Forward, the Department consulted with various stakeholders. The consultations focused on all aspects of agriculture and agri-food policy and included several phases: a first phase with invited stakeholders, a second phase of public consultations across the country, and a third phase of meetings with selected stakeholders to discuss the proposed future framework. A fourth phase of stakeholder consultation was planned for May 2008. In addition, approximately 100 submissions were received from associations and another 100 from individuals. Some provinces are also conducting consultation sessions with their stakeholders.
- 3.21 The Department recorded the consultation discussions and produced a report from each of its consultation sessions. Reports on what was heard are posted on the Department's website, by city in which the consultation occurred. As a result, the Department knows what participants said, and it communicated what it heard in subsequent consultation sessions. However, it did not formally gather stakeholder feedback on the accuracy of the published consultation information.

An overall analysis of stakeholder consultations is to be prepared

3.22 Given the time and effort invested by the participating stakeholders and by the Department, we expected that the output from the consultation process at each phase would be integrated into an overall analysis of key themes and issues and that this analysis would be made public. Since the consultation process was ongoing at the time of our audit, it was too early to conclude against this expectation. However, the Department has indicated that it will prepare such an analysis once the consultation process is complete.

- 3.23 Stakeholders informed us that the consultation process for Growing Forward was considerably better than that for the APF. In addition, a survey of participants was conducted after the second round of Growing Forward consultations. It showed that 63 percent of participants felt that the process for developing the next generation of agriculture and agri-food policy was clearly communicated, and that 69 percent believed that relevant issues were being addressed. However, only 49 percent understood how the consultation process would be connected to the decision-making process.
- **3.24** An internal presentation was made to senior the Department management in March 2007 on the survey results and the Growing Forward consultation process. The presentation indicated that there was skepticism about the final outcomes and that stakeholders were reserving their judgment until they saw how their input was incorporated.
- **3.25** Many factors will affect Growing Forward, such as discussions with the provinces and territories. However, by conducting its overall analysis, the Department will be in a better position to respond to queries from stakeholders as to how the consultations influenced Growing Forward decisions.

Development of a coherent policy framework is under way

- 3.26 We expected that the Department would have reviewed opportunities to fully integrate all the chapters and the environmental programs to demonstrate that Growing Forward is a coherent policy framework. We also expected that the Department would explain the policy and program changes from one framework to the next. However, because Growing Forward development was still under way, we could not yet arrive at a conclusion whether these expectations had been met.
- 3.27 Given that Growing Forward builds on the APF, it will be essential for the Department to clearly illustrate how the policy framework and programs have changed. This is essential to encourage maximum program "buy-in" by producers and to ensure that one program or chapter does not act as a disincentive for another program or chapter, the Department has indicated that such information will be available to producers and other stakeholders when development of Growing Forward programming is complete.

There was uncertainty for stakeholders

- 3.28 The first set of APF environment programs took much longer than expected to negotiate and sign agreements with the provinces and territories and develop agreements with delivery agents. Based on lessons learned, we would have expected the Department to have anticipated similar delays with the development of Growing Forward. In response to the April 2007 evaluation of the APF Environment Chapter, the Department management committed to developing "a clear transition strategy" from APF to Growing Forward programming to ensure that changes to programming would not affect service delivery and lead to implementation delays.
- 3.29 We recognize the challenges inherent in negotiating a comprehensive multilateral policy framework with all provincial and territorial governments that is appropriately informed by consultations with the sector. However, the Department could not provide us with evidence of a clear and timely transition plan to manage the risk of delays and to ensure consistent service delivery at the anticipated end of the APF.
- 3.30 In March 2007, the Department was aware of the risk that it might not be possible to conclude negotiations in time to implement Growing Forward programs in April 2008. In November 2007, federal, provincial, and territorial ministers announced their intention to seek the necessary authority to continue APF programming for up to an additional year, although the Department had initiated steps to obtain the necessary federal authority a few months earlier. Authority for a transition year was obtained, subject to approval of funding. In February 2008, the Department requested and received approval for funding to continue APF programs.
- 3.31 In March and April 2008, there were joint federal and provincial or territorial announcements of program continuation, by province and/or territory. Uncertainty regarding the programs continued until that time. Stakeholders, delivery agents, and the Department managers expressed concern about the environment programs' uncertainty, the extent of funding available, and their ability to plan under such conditions.
- **3.32** We recognize that a clear transition strategy could not be put in place until the appropriate authorities were obtained. This severely limited the Department's ability to have a clear and timely transition plan for the one-year extension.

- 3.33 A transition plan will also be needed when the extension year ends and Growing Forward begins. Such a transition plan would ensure that stakeholders are well informed in advance and would minimize program uptake delays and disruptions. A transition plan would include such things as a timeline for Growing Forward, changes made as well as those not made to programs, any administrative changes, and the amounts of funding available for projects under each program.
- **3.34** At the end of our audit, details on Growing Forward programming were not yet available. Therefore, it was too early for the Department to have prepared such a transition plan for Growing Forward.
- **3.35** Recommendation. In order to ensure that all stakeholders are well informed and to minimize program uptake delays, Agriculture and Agri-Food Canada should develop a clear and timely transition strategy well in advance of the end of its programs. Once Growing Forward is completed, Agriculture and Agri-Food Canada should prepare a schedule of review and consultations through the life of the new framework to ensure a smooth and timely transition to future policy frameworks.

The Department's response. Agriculture and Agri-Food Canada agrees. The Department is committed to working with provinces and territories to achieve smooth and timely transitions between policy frameworks and programs. These efforts involve regular stakeholder consultations and reviews, which include assessments of strengths and weaknesses of past approaches.

The Department will discuss the process of review and consultation with provinces/territories through the life of the framework, with a view to ensuring timely renewal. The Department recognizes the importance of beginning these processes early, because of the complexity of federal-provincial/territorial negotiations in this area of shared jurisdiction.

A strategic environmental assessment is to be completed

3.36 The Government of Canada's Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals calls for a strategic environmental assessment to be conducted for any policy, plan, or program proposal being provided to a minister or Cabinet for approval, and whose implementation may result in important environmental effects, either positive or negative. The Privy Council Office has indicated that departments are responsible for complying with the Cabinet directive and are accountable for the quality of their analyses.

3.37 At the time of our audit, Agriculture and Agri-Food Canada had not completed a strategic environmental assessment of Growing Forward. However, Department officials indicated that the Department intended to prepare one. Such assessments allow decision makers to anticipate, prevent, or reduce potential environmental harm and to enhance any environmental benefits.

Environment Chapter—contribution programs

- 3.38 By making the environment one of the key Agricultural Policy Framework (APF) elements, Agriculture and Agri-Food Canada recognized that the sustainability of the agriculture sector was closely linked with the natural environment. The Department established national environmental programs to improve the quality of water, soil, air, and biodiversity.
- **3.39** The Department either delivers or coordinates the delivery of five contribution programs (Exhibit 3.1).
- 3.40 The agreements specify the program to be delivered, the dollar commitment of the signatories, and the responsibilities of each signatory. In the Prairie provinces, Agriculture and Agri-Food Canada delivers most of the environment programs. In the other provinces and

Exhibit 3.1 Environment Chapter's contribution programs and their actual expenditures over five years

Environmental Farm Planning (\$70 million) is a voluntary and confidential process used by farmers to systematically identify environmental risks and benefits from their farming operation, and to develop an action plan to mitigate the risks. Producers are not compensated for completing environmental farm plans. In order to receive funding under the National Farm Stewardship and Greencover Canada programs (described below), producers must complete an environmental farm plan.

National Farm Stewardship Program (\$176 million) supports the adoption of environmentally beneficial practices by agricultural producers in the management of land, water, air, and biodiversity, for example, by improving on-farm storage and handling of agricultural waste and building fencing to prevent livestock damage adjacent to waterways.

Greencover Canada Program (\$58 million) helps producers improve their grassland-management practices, protect water quality, reduce greenhouse gas emissions, and enhance biodiversity and wildlife habitat, for example, by planting trees and shrubs on agricultural land and establishing cover crops to protect soil from erosion.

National Water Supply Expansion Program (\$64 million) improves the ability of agricultural producers to deal with drought situations, for example, by constructing water supplies (such as wells and water dugouts) and conducting groundwater studies.

Environmental Technology Assessment for Agriculture (\$3 million) is a research-based program that evaluates the performance of innovative technologies of food production to improve the long-term economic and environmental performance of the sector, for example, by developing a process to use farm wastes for heat and power.

Source: Agriculture and Agri-Food Canada

territories, the Department, the province or territory, or a delivery agent could be responsible for program implementation. For example, the Department delivers all programs in Manitoba except the environmental farm plan program, which is delivered by a non-government agency. In New Brunswick, a provincial agriculture department delivers almost all the programs.

3.41 We expected that the Department would have mechanisms in place to fulfill key provisions in the agreements. The Department negotiated 25 separate agreements to deliver the four on-farm contribution programs across Canada. We reviewed the agreements' monitoring and reporting requirements. We did not examine the Department payments to the provinces/territories and delivery agents.

The process for developing contribution agreements was lengthy

3.42 In March 2004, the Department created a team to coordinate the development of all agreements under the APF. It was responsible for approving the use of agreement templates and any subsequent changes made by environment program officials. The process for developing, negotiating, and signing the agreements was lengthy and complex. The internal evaluation of the APF Environment Chapter identified that agreements were being negotiated with provinces and territories while the Department was still changing their content, resulting in some variations across the country. The combination of drafting agreement templates and the internal approval process added up to one year to the signing of agreements. Given that the APF is a five-year framework, a one-year delay is significant. While the use of templates for agreements is a good idea, there was inadequate advanced planning regarding the template development process and what requirements the Department should include in the agreements' terms and conditions.

Consistency and clarity are lacking in the requirement and use of information

- 3.43 The Department requires the preparation of work planning documents, even though this requirement was not specified in all agreements. These documents are a means to identify the activities and results that delivery agents will pursue for the coming year.
- 3.44 Most work planning documents were available for the 2007–08 fiscal year but not for all years. Many of them did not have a clear indication of review by Department officials as only about half of them were signed and dated. Of those that were signed, they were dated late in the fiscal year—even as late as February 2008 for the 2007–08 fiscal

year. Because annual work planning documents were completed at or close to the start of the program year's activities, their usefulness and purpose as a planning document was undermined.

- 3.45 Financial reporting requirements in the agreements often gave delivery agents the option of providing audited financial statements and/or statements of expenditure. We found that these documents were seldom submitted. In addition, there was no indication that the Department reviewed or used the submitted documents for any particular purpose. The agreements also require that the delivery agents submit various performance information reports. At times, the Department accepted substitute documents that only partially met the requirements specified in the agreements. As well, documents were not always submitted with the frequency required. We found that there was a lack of consistency and clarity with respect to what, exactly, delivery agents had to submit and that the Department did not always collect the specific information that was identified in the agreements.
- **3.46** The lack of consistency and clarity in what information the Department requires and actually uses undermines the importance of identifying reporting requirements in the agreements and adds to the administrative burden of delivery agents.
- **3.47** Recommendation. When developing agreement terms and conditions, Agriculture and Agri-Food Canada should determine what information it wants, why it wants the information, and how it intends to use it, and develop and communicate a plan for using the information. This information should be clearly and consistently expressed in the agreements' terms and conditions. The Department should monitor and ensure it obtains the requested information.

The Department's response. Agriculture and Agri-Food Canada agrees. Consistent with the Treasury Board of Canada Secretariat's Policy on Transfer Payments and recommendations of the Independent Blue Ribbon Panel on Grant and Contribution Programs, the Department will make its information requirements more clear in new environment program terms and conditions and contribution agreements with recipients, and it will provide information in these documents about why the information is required and how it will be used.

The Department will also ensure consistency of information requirements between different parts of the country and different recipients. The Department will ensure it receives and reviews the required information, and it will limit requirements to information that

is needed. As well, it will regularly analyze the information it receives and use this analysis to report on progress toward objectives.

The Department will have most new terms and conditions in place by April 1, 2009; the others will be put in place, in consultation with provincial and territorial partners, by March 31, 2010.

The Department has identified some needed improvements to program delivery

- 3.48 Following the Treasury Board of Canada Secretariat's release of the Report of the Independent Blue Ribbon Panel on Grant and Contribution Programs in December 2006, Agriculture and Agri-Food Canada took the initiative to participate in working group meetings and developed a high-level action plan to address some of the Panel's recommendations aimed at simplifying program administration, improving risk management, and focusing on clients.
- 3.49 The Department is in the early stages of implementing its action plan, which includes developing revised contribution agreement templates and implementing a working group to help streamline the use of administrative forms. Several action items will coincide with the development of Growing Forward agreements and programs. Furthermore, the Department will need to develop a means to determine whether changes to the agreements result in the desired improvements to program delivery.
- **3.50** We also note that the Department created a separate organizational branch on 28 January 2008 in order to improve policy and program coherence and bring more effective management to the environment portfolio.

There has been slow progress in fixing data problems

- **3.51** The agreements require delivery agents to submit quarterly and annual operational information. We found that the Department has had several challenges with data collection and analysis.
- 3.52 After receiving the first submission of annual data for the 2005–06 fiscal year in June 2006 and comparing them with the quarterly data already received, the Department found several problems, including the fact that
 - · data did not match,
 - mandatory data fields were missing,
 - · codes for projects were unidentifiable, and
 - data provided by the same delivery agent could not be reconciled.

- The Department recognized these problems and has made efforts to correct them; however, progress has been slow due to limited staffing availability and the complexity of dealing with multiple delivery agents. The data serve as the primary source for reporting on the performance of the Environment Chapter. The challenges in data collection and analysis raise concerns regarding the accuracy of information presented in the Department's departmental performance reports. To date, the reports contain no notice of data accuracy limitations.
- 3.54 Due to concerns regarding data quality, the Department prepared a legal disclaimer in February 2008 stating that it
 - "... cannot guarantee [the data's] accuracy or fitness for use by anyone else, and therefore the user assumes all liability and risk with respect to the completeness, accuracy, fitness for use, or other matter relating to the information or data records...."

The disclaimer is attached to internal reports. The Department intends to remove it after the data quality problems are resolved.

- We noted that in the 2003–04 fiscal year, department officials had identified the need for an integrated information system to assist with direct delivery in the Prairie provinces and a national information system to collect results and aggregate data from delivery agents for information management and performance reporting. The Department allocated \$1.2 million for this purpose.
- 3.56 However, the Department developed a system for direct delivery only in the Prairie provinces. Despite the national information system being identified as a priority for environment program delivery, it was never developed, which has had a direct impact on the Department's ability to collect accurate and reliable data for performance reporting.
- Recommendation. Agriculture and Agri-Food Canada should develop and implement a standardized process for collecting national data to ensure that it can report accurate, consistent, and timely information on program results.

The Department's response. Agriculture and Agri-Food Canada agrees. It will take steps, by December 2009, to strengthen its of program performance information to support accurate performance An interim database has been created by the Department to electronically store, analyze, and report program information received from delivery agents.

Operational resources were not tracked by program

- 3.58 The Department was allocated \$126 million as the operational budget to deliver environment programs (excluding the National Land and Water Information Service; paragraphs 3.84 to 3.105); and \$400 million for the programs' contribution portion over the five-year life of the APE.
- **3.59** We expected the Department to have plans that identified objectives and expected results to be achieved and that operational budgets would be allocated according to these plans. We requested financial information concerning amounts allocated, budgets requested by program managers to deliver the programs, budgets approved, and amounts allocated to environment programs for each year.
- **3.60** However, the Department was unable to provide a complete set of financial information to demonstrate that this type of planning had occurred. When the APF was introduced, the Department underwent an organizational restructuring. Cross-functional teams were developed and budgets were allocated based on team outputs, rather than on programs. A team output could include more than one program.
- **3.61** Without an analysis between planned operating expenses, actual budget allocation, and actual operating expenses by program, the Department could not demonstrate that a program's operational requirements were considered when resources were allocated.
- **3.62** In addition, the Department did not separately track the source of operational resources; therefore, the APF operational funds were amalgamated with other departmental funds. This approach resulted in resource allocations being based on short-term departmental priorities and led to significant financial confusion within the Department. This approach was followed until April 2007.
- **3.63** We noted that in the 2007–08 fiscal year, operating funds were reduced across the Department. Operating funds to deliver the environment programs were reduced by 10 percent. Analysis was not provided showing which programs should be reduced, and why, to determine priorities for the operational reductions.
- 3.64 The Department recognized that more accountability was needed. In the 2007–08 fiscal year, it set up its financial systems so that it could monitor the operational expenditures by program beginning April 2008.

- 3.65 The contribution portion of the APF Environment Chapter funding was kept separate from the operational funding and was monitored by program in the Department's financial system. Due to program implementation delays, the contribution funds were not used in the early years of the APF as planned. the Department used special provisions in place at the time to carry funds forward from one fiscal year to the next to avoid losing the funds that were not spent. Of the \$400 million originally allocated to the contribution environment programs, Department records indicate that about \$370 million was spent on these programs.
- **Recommendation.** In order to ensure proper financial management, Agriculture and Agri-Food Canada should make certain that
 - it can demonstrate how operational resource allocations considered program objectives and results to be achieved, and
 - it can base operational budget reductions on analysis that considers program impacts.

The Department's response. Agriculture and Agri-Food Canada agrees. The Department has taken several steps in recent years to strengthen and improve its financial management, as reflected in the 2007–08 Treasury Board of Canada Secretariat Management Accountability Framework (MAF) assessment.

In the 2007–08 fiscal year, an improved business planning process was implemented that aligns information about departmental resources, priorities, and authorities from across different areas, resulting in complete and accurate data in support of financial and non-financial decision making and overall operational performance.

In the 2008–09 fiscal year, further steps were undertaken to ensure resource allocation and use—both grant and contribution and operational—are better tracked for each program.

Improvements have also been made in the area of financial budgeting and operational resource allocation. Multi-year, integrated planning and budgeting is under way, which considers program objectives and expected results and supports more longer-term, strategic

In addition, changes in governance have led to improved financial management accountability for the Department's branch heads over their respective financial resources.

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Collectively, senior management is working to ensure that resources are directed to departmental priorities and that budget reductions and reallocations, if any, take into account program impacts.

Performance measurement and reporting

- 3.67 According to the Treasury Board of Canada Secretariat's 2000 policy and guidelines regarding transfer payments, departments must develop a Results-Based Management and Accountability Framework that provides for appropriate measuring and reporting of results.
- 3.68 We found that Agriculture and Agri-Food Canada's performance measurement and reporting framework is not fully developed.

 Improvements are required in the structure of its Results-Based Management and Accountability Framework, the type of information it reports, and the measurement of environmental change resulting from its programs.

The Department did not clarify how its programs improve the environment

- **3.69** The Department developed a performance measurement and reporting framework for the contribution programs of the Agricultural Policy Framework (APF) Environment Chapter. The performance framework's purpose was to identify how the programs' activities contributed to the achievement of the Environment Chapter's end outcomes using results-chain logic, a management principle that links program activities to desired results.
- 3.70 A key factor in an effective results chain is the clarity of the cause and effect relationships between each level. It should show how and which specific program activities link to specific deliverables (goods and services delivered), which in turn link to specific immediate and then intermediate outcomes (results), which link to a specific end outcome. In the Environment Chapter results chain, the Department grouped together all program activities. They lead to a group of deliverables, which lead to a group of immediate and intermediate outcomes. These in turn lead to the end outcome of improved stewardship by farmers of the soil, water, air, and biodiversity. The cause and effect relationship between each element of the results chain and how each program's activities relate to the end outcome is not clear.
- 3.71 We also found that the Department did not develop targets for each level. In particular, there were no targets at the intermediate level. This is relevant because this is the first level where amalgamated operational information can demonstrate what results the program has achieved.

3.72 We also noted that the Department did not monitor and report on program results beyond providing operational information, such as the number of completed water infrastructure projects (for example, wells and pipelines). Without more comprehensive information on what the programs are achieving, senior management cannot be certain whether programs are realizing their intended results or know where to focus program improvements. Furthermore, it limits the Department's ability to communicate a complete picture about the environment programs' performance to Parliament and stakeholders.

Impacts at the farm level need to be better identified

- 3.73 The Department's evaluation of the Environment Chapter indicated that there was insufficient data to link action occurring at the farm level through APF programs to positive environmental change. It identified the need to better understand the environmental and economic impacts of farming practices funded under the Environment Chapter, and the need to better understand the impacts of environmental farm plans (EFPs).
- 3.74 According to the Department records, as of March 2008, approximately 57,000 EFPs were completed and reviewed. This represents about 30 percent of the total farm population of over 200,000, and is close to the Department's target of 60,445 EFPs.
- 3.75 The evaluation also noted that, despite funding the EFP program, the Department does not have access to information contained in the plans. To encourage producer participation in the EFP program, the Department agreed to allow producers to keep the information confidential in response to address producers' concerns that disclosing their environmental risks could pose a liability to them, particularly if they did not act on those risks. However, the confidentiality of EFPs means that when a producer requests funding under the Environment Chapter, there is no way for the Department to know to what extent it will mitigate an on-farm environmental harm or whether it addresses one of the farm's priority risks. The confidentiality of EFPs also means that the Department cannot measure change in the implementation of the on-farm environmental action plan over time based on its EFP program. We note that other organizations, such as Statistics Canada, have developed a means to collect and report on statistics while maintaining confidentiality.

Environmental targets were set but the Department cannot yet measure their achievement

- 3.76 The Department measures the Environment Chapter's end outcome using six of the indicators in its National Agri-Environmental Health Analysis and Reporting Program (NAHARP). The six indicators are the following:
 - The percentage of farmland with various levels of residual nitrogen in the soil. Surplus nitrogen in the soil, such as from the use of fertilizer, poses a risk to the environment.
 - The percentage of farmland with various levels of risk of water contamination by nitrogen. Nitrogen in water contributes to algae growth and may pose a human health hazard.
 - The percentage of farmland at various levels of risk of water erosion. Water erosion contributes to large soil losses from farm fields and can affect water quality.
 - The levels of agricultural emissions of greenhouse gases.

 Greenhouse gases represent atmospheric pollution and contribute to climate change.
 - The change in levels of organic carbon in agricultural soil. Farming practices that remove carbon dioxide from the atmosphere and add it to the soil contribute to soil health and help reduce greenhouse gas emissions.
 - The availability of wildlife habitat on farmlands. Conservation of biodiversity depends on producers sustaining or enhancing the quality of wildlife habitats.
- 3.77 The APF implementation agreements between the federal and provincial/territorial governments include specific targets for each of the six NAHARP indicators. The targets were to be attained by 31 March 2008, the expected end of the APF. Example targets from the agreements include
 - a 21 percent reduction in the estimated average rate of water erosion on cropland, and
 - an 8 percent reduction in agricultural greenhouse gas emissions.

The commitment by the federal, provincial, and territorial governments to set goals and use NAHARP indicators to monitor and report on agri-environmental progress is a significant accomplishment.

- 3.78 However, the six NAHARP indicators do not measure all agricultural impacts. A number of negative agricultural impacts are not measured, such as the effects of pesticides, air pollution other than greenhouse gases, and wind erosion. The indicators do measure some benefits of agriculture on the environment, such as the sequestering of carbon in agricultural soils (removing carbon dioxide from the atmosphere), which helps reduce greenhouse gas emissions. But other benefits may not be measured.
- 3.79 Other than the six indicators identified by the Department to measure the Environment Chapter end outcomes, a broader set of 24 indicators is being developed under NAHARP to assess additional agricultural impacts.
- 3.80 We also noted that NAHARP indicators are reported only every five years, with a three- to four-year gap between the year of measurement and the year of reporting. The most recent information available is for 2001, which represents baseline data before the APF was established. For this reason, at the expected end of the APF, it was not possible to demonstrate the extent of environmental benefit of implementing the Environment Chapter, or the extent to which targets in the implementation agreements had been met. Departmental management is confident that the report on 2006 data, which will be available internally in 2008 and published in 2009, will show the impact of the APF programs.

Environmental benefits of programming are not measured

- 3.81 As previously mentioned, there are weaknesses in the Department's performance measurement strategy. There is a lack of clarity in the cause and effect relationships between each level of the Results-Based Management and Accountability Framework. As well, targets to assess progress have not been developed for each level. Departmental reporting focuses on immediate results rather than on intermediate and end outcomes. There is insufficient data to demonstrate that action at the farm level has led to positive environmental change. In addition, there is delayed reporting of environmental change under the NAHARP program; therefore, the impact of the APF environment programs on the environment is not yet known.
- **3.82** Despite the above, the beneficial management practices funded under the Department's environment programs are supported by science that indicates that these activities will likely lead to positive environmental change. For example, providing water to cattle away

from streams will likely improve water quality. As well, a 2006 survey of producers indicated that those with an environmental farm plan were more likely to adopt certain farming practices, such as testing the soil to determine proper fertilizer application rates. We recognize the challenges in attributing environmental change to programming and the long-term nature of environmental change. The Department is in the process of developing a computer modelling system to better understand the effects of its programs on the environment.

3.83 Recommendation. In an effort to know and demonstrate whether the environment programs are achieving the intended results and to continuously improve, Agriculture and Agri-Food Canada should ensure that its Results-Based Management and Accountability Framework for the environment programs under Growing Forward is designed and fully implemented to monitor and improve program effectiveness. The framework should

- provide a reasonable connection between each element of the results chain,
- identify specific and measurable targets at all levels, and
- collect and report outcome information as well as operational information.

In addition, the Department should identify and implement options for collecting more specific information on environmental farm plans to facilitate performance reporting.

The Department's response. Agriculture and Agri-Food Canada agrees. A new logic model for the Department's environment programs will be in place by 1 April 2009 to support program delivery. It will better define specific and measurable outcome targets at each outcome level.

The Department will also strengthen its practices relating to performance measurement in this area. It will link National Agri-Environmental Health Analysis and Reporting Program agri-environmental information to Canadian Regional Agriculture Model information to measure the impacts of certain beneficial management practices.

The Department will use environment program and other data to better understand the impacts of beneficial management practices and their linkages to environmental farm plans. By the end of the 2008–09 fiscal year, taking into consideration concerns about

producer confidentiality, the Department will explore options to collect more specific information on EFPs.

The logic model and strengthened performance measurement strategy will be in place by April 2009.

National land and water information service

- 3.84 The National Land and Water Information Service (NLWIS) was to provide integrated, up-to-date, and consistent land use, soil, water, climate, and biodiversity resource information to Agriculture and Agri-Food Canada and land-use managers to enable them to make environmentally responsible land-use decisions. This type of information is needed to support program and policy decisions about the environment.
- 3.85 Because the total estimated cost of the NLWIS information technology (IT) project is \$100 million over five and a half years, NLWIS was identified as a major Crown project. The APF contributed \$70 million and the Department reallocated \$30 million from existing ongoing activities. As of March 2008, \$72 million had been spent on NLWIS on improving access to geographical information, maximizing the use of data collected by others, and improving data collection.
- 3.86 The project is being developed and implemented in four phases. By the end of phase two in October 2007, the project was about one year behind schedule. As a result of the delay, the timing of project phases was adjusted and the scope of the project has been scaled back.
- **3.87** We expected that NLWIS would be appropriately managed and developed in accordance with best IT practices.
- 3.88 We found that the project was poorly managed. Senior management recognized that corrective action needed to be taken and approved an internal audit and an independent review, both of which concluded in early 2008. The Department has taken steps that it expects will address the problems identified. However, it is too early to determine if the corrective measures will resolve the issues.

Project governance has been ineffective

3.89 The original NLWIS project charter clearly identified the roles and responsibilities of all the key players that were to provide oversight. Two senior Department committees were to take on this oversight role: the Environment Board and the Senior Project Committee.

- **3.90** We found that the Department's Environment Board was not actively involved in the project from the start. As well, the Senior Project Committee was not actively involved until late in 2007. A plan did exist to involve other external stakeholders on key committees and external advisory groups; however, it was never formally put in place.
- **3.91** This has led to a lack of a shared vision for the project. The NLWIS project team, the Department environment program officials, and the key external stakeholders all had different views of what the project was going to accomplish. This also led to a lack of clarity regarding roles and responsibilities.
- **3.92** Agriculture and Agri-Food Canada officials acknowledged that these issues needed to be addressed. They recognized that it was important to revisit the purpose of NLWIS and re-establish a vision and governance structure that would be shared among all key stakeholders.
- **3.93** In January 2008, a new governance structure was adopted, and at the end of March 2008, the vision was significantly restated in more general terms and some key aspects were removed. The Department expects that these changes will help to address the problems that existed during the first two project phases.
- **3.94** Recommendation. Agriculture and Agri-Food Canada should ensure that appropriate governance arrangements are established and function as intended for the remainder of the National Land and Water Information Service (NLWIS) project.

The Department's response. Agriculture and Agri-Food Canada agrees, and has already taken action to significantly strengthen NLWIS governance.

The conduct of an internal "Systems Under Development Audit" and a management-initiated review in early 2008 resulted in two significant improvements to NLWIS program governance: the naming of an Assistant Deputy Minister, Environment, who would work with the Chief Information Officer to oversee completion of the NLWIS project, and support from an Assistant Deputy Minister-level Steering Committee, which includes representatives from Treasury Board of Canada Secretariat.

Sound project management has been lacking

3.95 Insufficient details in business case. A business case explains the rationale for the project and the project results needed to meet an organization's business needs.

- 3.96 The NLWIS business case does not outline measurable and quantifiable key intended results to ensure project success. The service delivery model remains general and has not yet been approved. While the first project phase has specific deliverables, the remaining three phases were still described at a very broad level and were highly dependent upon consultations with key internal and external stakeholders, which have not materialized. Because of this it is not possible to assess whether the NLWIS project objectives were met and to determine the value and impact of what was not delivered.
- **3.97 Recommendation.** Given the recent review and resulting refinements to the National Land and Water Information Service (NLWIS) project, Agriculture and Agri-Food Canada should ensure that the expected benefits of NLWIS are specific enough to be measured.

The Department's response. Agriculture and Agri-Food Canada agrees. In May 2008, the NLWIS Steering Committee approved the refined project scope plus specific deliverables for all phases, to a level of detail sufficient to measure outcomes achievement.

- **3.98** Inadequate organizational capacity for the project. In general, we found that the Department lacked the organizational capacity to manage a project of this size and complexity.
- 3.99 Although staffing gaps had been reported to senior management, up until recently the project was reported as on time and on budget. However, this was not the case. The latest quarterly report (covering October to December 2007) indicates that the inability to obtain sufficient skilled resources has led to delays and has affected scoping and the project priorities.
- **3.100** The Department expects that this area of risk will continue to affect the delivery of the remaining project deliverables, and the project management is significantly revising the project deliverables to minimize the impact.
- **3.101 Recommendation.** Agriculture and Agri-Food Canada should be able to demonstrate that it has the capability to successfully complete the remainder of the National Land and Water Information Service (NLWIS) project in accordance with revised specifications.

The Department's response. Agriculture and Agri-Food Canada agrees and has already taken action as a result of an internal review and a systems-under-development audit, both concluded in early 2008.

A multi-disciplinary team with the skills and competencies for a project of this nature, supported by expert consultants, has been in place since early 2008 to ensure successful project completion.

Detailed resource planning has also been completed for the refined scope, which includes resource allocation and redirection as required to deliver on each scope element.

- **3.102** Weak monitoring and control processes. An organization uses project management to control and coordinate its activities, resources, time, and costs. We found that NLWIS had weak project management practices, which led to long delays, and a significant refining of the project scope.
- 3.103 Project management processes have varied over the last two and a half years because there have been five different project managers on this project. Most project managers lacked major Crown project experience. The frequent change in project managers has led to deliverables being late and project requirements being changed without the appropriate approvals. The Department has recently taken action to address this.
- **3.104** Department measures and reports the actual expenses against budgeted dollars. It does not measure what was delivered for the resources used. Also, the impact of deferred work is not reported.
- **3.105** Recommendation. Agriculture and Agri-Food Canada should ensure that the monitoring and reporting of the National Land and Water Information Service (NLWIS) project's progress includes a comparison of actual deliverables to expected deliverables and the impact of work not completed.

The Department's response. Agriculture and Agri-Food Canada agrees. In early 2008, as a result of a management-initiated review and a systems under development audit, project oversight was strengthened by the adoption of an earned value approach for tracking results and expenditures against plans and a risk monitoring risk mitigation strategy to ensure that expected outcomes and benefits are met.

An earned value approach report is reviewed, discussed, and approved at every NLWIS Steering Committee meeting.

Conclusion

3.106 The overall objective of the audit was to determine whether Agriculture and Agri-Food Canada could demonstrate that it was managing the Environment Chapter of the Agricultural Policy Framework (APF) to achieve its environmentally sustainable agriculture objectives. We examined four components of the APF Environment Chapter: the process for Growing Forward development, management of the contribution programs, the performance measurement and reporting framework, and project management of the National Land and Water Information Service. We did not examine program effectiveness or program payments made to delivery agents. We used four sub-objectives to assess the overall objective.

3.107 First, we looked at how the Department is developing the next generation of the APF, Growing Forward, to see if a lessons-learned approach was being used. We noted that the Department had carried out three formal reviews of APF, including an extensive stakeholder consultation process. These reviews produced valuable information for Growing Forward. Because the Department had experienced serious delays in negotiating and signing agreements with the provinces and territories when it developed the APF, based on "lessons learned," it should have anticipated that negotiation and consultation would have taken longer than expected for Growing Forward, and planned accordingly. We did not find evidence of a clear and timely transition plan to manage the risk of delays and to ensure consistent service delivery at the anticipated end of the APF. Many elements of Growing Forward policy development were not yet complete at the time of our audit. As a result, the extent to which our expectations regarding the development of the policy framework and associated programs were fulfilled could not be assessed.

3.108 Second, we examined whether the Department is effectively managing the contribution programs of the Environment Chapter. We found that despite a lengthy process to develop contribution agreements, the reporting requirements were unclear and there was limited evidence that information received was well used. The Department identified problems with data quality; however, progress to resolve the problems has been slow. In addition, we found that information about the operational resources used to deliver each program was not tracked until recently. However, contribution funds paid to provinces, delivery agents, and producers were appropriately tracked by program. While the Department recognized the problems it had in managing the contribution programs, and was taking corrective

action, this action was not advanced enough to demonstrate that the Department was effectively managing these activities.

3.109 Third, we examined whether the Department has appropriate performance information to inform decision makers and to assess and report on the Environment Chapter's success and improve program delivery. We found that there are weaknesses in the Department's performance measurement and reporting strategy. There is a lack of clarity in the cause and effect relationships between each level of its Results-Based Management and Accountability Framework. As well, targets to assess progress have not yet been developed for each level of the Framework. Departmental reporting focuses on outputs rather than on intermediate and end outcomes. There is insufficient data to demonstrate that action at the farm level has led to positive environmental change. In addition, there is delayed reporting of environmental change under the NAHARP program, such that the impact of the APF environment programs on the environment is not yet known. Despite the above, the beneficial management practices funded under the Department's environment programs are supported by science that indicates that these activities will likely lead to positive environmental change. We also recognize the challenges in measuring environmental change, such as the long time frame required to measure trends and the difficulty attributing environmental change to programming. However, these weaknesses mean that the performance information is inadequate to assess and improve environmental programming, and the impact of the APF environment programs on the environment is not yet known.

3.110 Finally, we reviewed the development of the National Land and Water Information Service (NLWIS) to determine whether the information technology project was appropriately managed. The NLWIS was designed to support environmentally responsible land-based decisions. We found that this major Crown project was poorly managed. It fell behind schedule and had to be revised from original plans. Key decision makers were not involved to the degree expected for a project of this complexity. Participants had differing views of the project's goals, and project management suffered from a lack of expertise and continuity. Roles and responsibilities were unclear, deliverables were late, and the project requirements were changed without appropriate approvals. In recognition of these problems, senior management approved an internal audit and an independent review of NLWIS. During our audit, steps were being taken to address problems identified by the audit and review; however,

it was too soon to determine if those actions would correct the identified problems.

3.111 Therefore, it is too soon to determine whether the Department is managing the Environment Chapter of the Agricultural Policy Framework to achieve its environmentally sustainable agriculture objectives. In summary, we found the following:

- The Growing Forward policy and program development is ongoing. Many of the activities that we expected to review during the course of our audit were not yet complete.
- The Department's performance measurement and reporting framework was not fully developed. As well, the impact of the APF environment programs on the environment has not yet been measured because National Agri-Environmental Health Analysis and Reporting Program indicators are reported every five years, with a three- to four-year gap between the year of measurement and the year of reporting.
- The Department is taking action to address a number of deficiencies. For example, action is underway to improve the quality of data from delivery agents and to improve the terms and conditions in contribution agreements. The Department is also taking corrective measures with the NLWIS major Crown project. However, it is too early to say if these measures will resolve the problems.

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About the Audit

Objectives

Our overall audit objective was to determine whether Agriculture and Agri-Food Canada (AAFC) could demonstrate that it was managing the Environment Chapter of the Agricultural Policy Framework to achieve its environmentally sustainable agriculture objectives.

There were four sub-objectives, which were to determine whether Agriculture and Agri-Food Canada

- used a lessons-learned approach to develop the next generation of the Agricultural Policy Framework Growing Forward,
- · effectively managed the contribution programs of the Environment Chapter,
- had appropriate performance information to inform decision makers and to assess and improve Environment Chapter program delivery, and
- had appropriately managed the National Land and Water Information Service.

Scope and approach

The Agricultural Policy Framework (APF) represented AAFC's policy and program framework for a five-year period, which ended on 31 March 2008. The APF included the Environment Chapter plus four other chapters: Business Risk Management, Food Safety and Quality, Renewal, and Science and Innovation. We examined the development of the next generation of the APF, entitled Growing Forward, to ensure that a lessons-learned approach had been used.

The remainder of our audit focused solely on the APF's Environment Chapter. We looked at whether its five contribution programs were effectively managed. This included the management of resources for those programs and the mechanisms in place to ensure that delivery agents fulfilled the programs' key requirements. We also examined the performance indicators and standards put in place to measure the achievement of the environment programs' objectives, and to monitor and improve on program effectiveness.

In addition, we examined one specific program within the Environment Chapter: the National Land and Water Information Service (NLWIS). This key information system was intended to support the environmental programs by providing environmental information; decision tools; and improvements in national data collection, analysis, and reporting. Given the importance of this system, and the fact that it was a \$100-million, major Crown project, we wanted to ensure that it was developed and managed in accordance with best practices.

In conducting this work, we did not audit the delivery of services by the provinces/territories and the delivery agents. However, we did examine the documents that they provided to AAFC to account for their performance.

We interviewed officials and reviewed documents at AAFC's headquarters in Ottawa and at its office in Regina (where most of the contribution programs are administered). We reviewed all 25 agreements that the Department has in place for the delivery of those programs, and we examined all associated files to determine whether key terms and conditions in the agreements were met.

Criteria

Listed below are the criteria that were used to conduct this audit and their sources.

Criteria	Sources	
Agricultural Policy Framework and its Successor		
We expected the Department to have applied a lessons-learned approach in the renewal of the Agricultural Policy Framework.	Treasury Board of Canada Secretariat, Management Accountability Framework (MAF), Areas of Management (2005), Learning, Innovation and Change Management	
We expected the Department to have reviewed opportunities to maximize integration and coherence across the chapters, in preparing for the next generation of the Agricultural Policy Framework.	Treasury Board of Canada Secretariat, Management Accountability Framework (MAF), Areas of Management (2005), Governance and Strategic Directions	
We expected the Department to have reviewed opportunities to maximize integration and coherence among the programs within the Environment Chapter, in preparing for the next generation of the Agricultural Policy Framework.	Treasury Board of Canada Secretariat, Management Accountability Framework (MAF), Areas of Management (2005), Governance and Strategic Directions	
Environment Chapter—	-Contribution Programs	
We expected the Department to have based its management of financial resources and staff on sound planning, to contribute to effective program delivery of the Environment Chapter programs.	Treasury Board of Canada Secretariat, Management Accountability Framework (MAF), Areas of Management (2005), Governance and Strategic Directions	
We expected the Department to have effectively managed the contribution programs of the Environment Chapter.	Treasury Board of Canada Secretariat, Policy on Transfer Payments (June 2000), Section 7	
Performance Measu	rement and Reporting	
We expected the Department to have identified performance indicators and standards to measure the achievement of the environment programs' objectives, and to have systems in place to monitor, report on, and improve program effectiveness.	Treasury Board of Canada Secretariat, Preparing and Using Results-Based Management and Accountability Frameworks (February 2005), Section 4	
National Land and Wat	ter Information Services	
We expected the Department to have developed and managed the National Land and Water Information Service in accordance with best information technology practices.	Project Management Institute, A Guide to the Project Management Body of Knowledge and Government Extension to the PMBOK Guide (2004), sections 4–12	
	 Information Systems Audit and Control Association, Control Objectives for Information and Related Technology (2004), Section A 	

Audit work completed

Audit work for this chapter was substantially completed on 30 April 2008.

Audit team

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Appendix List of recommendations

The following is a list of recommendations found in Chapter 3. The number in front of the recommendation indicates the paragraph number where it appears in the Chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation Agricultural Policy Framework and its Successor

3.35 In order to ensure that all stakeholders are well informed and to minimize program uptake delays, Agriculture and Agri-Food Canada should develop a clear and timely transition strategy well in advance of the end of its programs. Once Growing Forward is completed, Agriculture and Agri-Food Canada should prepare a schedule of review and consultations through the life of the new framework to ensure a smooth and timely transition to future policy frameworks. (3.28–3.34)

Response

Agriculture and Agri-Food Canada agrees. The Department is committed to working with provinces and territories to achieve smooth and timely transitions between policy frameworks and programs. These efforts involve regular stakeholder consultations and reviews, which include assessments of strengths and weaknesses of past approaches.

The Department will discuss the process of review and consultation with provinces/territories through the life of the framework, with a view to ensuring timely renewal. The Department recognizes the importance of beginning these processes early, because of the complexity of federal-provincial/territorial negotiations in this area of shared jurisdiction.

Recommendation

Response

Environment Chapter—Contribution Programs

When developing agreement terms and conditions, Agriculture and Agri-Food Canada should determine what information it wants, why it wants the information, and how it intends to use it, and develop and communicate a plan for using the information. This information should be clearly and consistently expressed in the agreements' terms and conditions. The Department should monitor and ensure it obtains the requested information. (3.43 - 3.46)

Agriculture and Agri-Food Canada agrees. Consistent with the Treasury Board of Canada Secretariat's Policy on Transfer Payments and recommendations of the Independent Blue Ribbon Panel on Grant and Contribution Programs, the Department will make its information requirements more clear in new environment program terms and conditions and contribution agreements with recipients, and it will provide information in these documents about why the information is required and how it will be used.

The Department will also ensure consistency of information requirements between different parts of the country and different recipients. The Department will ensure it receives and reviews the required information, and it will limit requirements to information that is needed. As well, it will regularly analyze the information it receives and use this analysis to report on progress toward objectives.

The Department will have most new terms and conditions in place by April 1, 2009; the others will be put in place, in consultation with provincial and territorial partners, by March 31, 2010.

Agriculture and Agri-Food Canada agrees. It will take steps, by December 2009, to strengthen its performance measurement practices for environment programs. These will include improving the systematic collection and analysis of program performance information to support accurate performance reporting, and meeting with delivery agents to clarify program data standards in order to improve data reliability and reporting requirements.

> An interim database has been created by the Department to electronically store, analyze, and report program information received from delivery agents.

3.57 Agriculture and Agri-Food Canada should develop and implement a standardized process for collecting national data to ensure that it can report accurate, consistent, and timely information on program results. (3.51 - 3.56)

Recommendation

3.66 In order to ensure proper financial management, Agriculture and Agri-Food Canada should make certain that

- it can demonstrate how operational resource allocations considered program objectives and results to be achieved, and
- it can base operational budget reductions on analysis that considers program impacts. (3.58–3.65)

Response

Agriculture and Agri-Food Canada agrees. The Department has taken several steps in recent years to strengthen and improve its financial management, as reflected in the 2007–08 Treasury Board of Canada Secretariat Management Accountability Framework (MAF) assessment.

In the 2007–08 fiscal year, an improved business planning process was implemented that aligns information about departmental resources, priorities, and authorities from across different areas, resulting in complete and accurate data in support of financial and non-financial decision making and overall operational performance.

In the 2008–09 fiscal year, further steps were undertaken to ensure resource allocation and use—both grant and contribution and operational—are better tracked for each program.

Improvements have also been made in the area of financial budgeting and operational resource allocation. Multi-year, integrated planning and budgeting is under way, which considers program objectives and expected results and supports more longer-term, strategic decision making.

In addition, changes in governance have led to improved financial management accountability for the Department's branch heads over their respective financial resources.

Collectively, senior management is working to ensure that resources are directed to departmental priorities and that budget reductions and reallocations, if any, take into account program impacts.

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Recommendation

Performance Measurement and Reporting

- 3.83 In an effort to know and demonstrate whether the environment programs are achieving the intended results and to continuously improve, Agriculture and Agri-Food Canada should ensure that its Results-Based Management and Accountability Framework for the environment programs under Growing Forward is designed and fully implemented to monitor and improve program effectiveness. The framework should
- provide a reasonable connection between each element of the results chain,
- identify specific and measurable targets at all levels, and
- collect and report outcome information as well as operational information.

In addition, the Department should identify and implement options for collecting more specific information on environmental farm plans to facilitate performance reporting. (3.67–3.82)

Response

Agriculture and Agri-Food Canada agrees. A new logic model for the Department's environment programs will be in place by 1 April 2009 to support program delivery. It will better define specific and measurable outcome targets at each outcome level.

The Department will also strengthen its practices relating to performance measurement in this area. It will link National Agri-Environmental Health Analysis and Reporting Program agri-environmental information to Canadian Regional Agriculture Model information to measure the impacts of certain beneficial management practices.

The Department will use environment program and other data to better understand the impacts of beneficial management practices and their linkages to environmental farm plans. By the end of the 2008–09 fiscal year, taking into consideration concerns about producer confidentiality, the Department will explore options to collect more specific information on EFPs.

The logic model and strengthened performance measurement strategy will be in place by April 2009.

National Land and Water Information Service

3.94 Agriculture and Agri-Food Canada should ensure that appropriate governance arrangements are established and function as intended for the remainder of the National Land and Water Information Service (NLWIS) project. (3.89–3.93)

Agriculture and Agri-Food Canada agrees, and has already taken action to significantly strengthen NLWIS governance.

The conduct of an internal "Systems Under Development Audit" and a management-initiated review in early 2008 resulted in two significant improvements to NLWIS program governance: the naming of an Assistant Deputy Minister, Environment, who would work with the Chief Information Officer to oversee completion of the NLWIS project, and support from an Assistant Deputy Minister-level Steering Committee, which includes representatives from Treasury Board of Canada Secretariat.

Recommendation Given the recent review and resulting refinements to the National Land and Water Information Service (NLWIS) project, Agriculture and Agri-Food Canada should ensure that the expected benefits of NLWIS are

3.101 Agriculture and Agri-Food Canada should be able to demonstrate that it has the capability to successfully complete the remainder of the National Land and Water Information Service (NLWIS) project in accordance with revised specifications. (3.98 - 3.100)

specific enough to be measured.

(3.95 - 3.96)

3.105 Agriculture and Agri-Food Canada should ensure that the monitoring and reporting of the National Land and Water Information Service (NLWIS) project's progress includes a comparison of actual deliverables to expected deliverables and the impact of work not completed. (3.102 - 3.104)

Response

Agriculture and Agri-Food Canada agrees. In May 2008, the NLWIS Steering Committee approved the refined project scope plus specific deliverables for all phases, to a level of detail sufficient to measure outcomes achievement.

Agriculture and Agri-Food Canada agrees and has already taken action as a result of an internal review and a systems-underdevelopment audit, both concluded in early 2008.

A multi-disciplinary team with the skills and competencies for a project of this nature, supported by expert consultants, has been in place since early 2008 to ensure successful project completion.

Detailed resource planning has also been completed for the refined scope, which includes resource allocation and redirection as required to deliver on each scope element.

Agriculture and Agri-Food Canada agrees. In early 2008, as a result of a management-initiated review and a systems under development audit, project oversight was strengthened by the adoption of an earned value approach for tracking results and expenditures against plans and a risk monitoring risk mitigation strategy to ensure that expected outcomes and benefits are met.

An earned value approach report is reviewed, discussed, and approved at every NLWIS Steering Committee meeting.

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Chapter 4
Annual Report
on Sustainable Development Strategies





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Annual Report on Sustainable Development Strategies

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

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Annual Report on Sustainable Development Strategies

Main Points

What we examined

In a 1995 amendment to the Auditor General Act, Parliament created a requirement for federal departments to prepare sustainable development strategies, table them in Parliament, and update them every three years. The process of creating the strategies was intended to ensure that government departments and agencies would examine their policies and programs to identify their potential social, economic, and environmental consequences. The strategies were to set out opportunities for more sustainable development in concrete action plans.

Over the past decade, we frequently reported significant weaknesses in the quality and relevance of the commitments presented in the sustainable development strategies. Last year in our 10th annual report on the strategies, we concluded that the government's current approach to producing and using sustainable development strategies was not working to deliver progress toward sustainable development. The government agreed with our recommendation that it review its approach to clarify its expectations and revitalize the process. It committed to completing a review by the end of October 2008.

Pending the outcome of the government's review and in accordance with our legal obligation to monitor and report annually on the strategies, we examined the implementation of one commitment each from the 2007–2009 strategies of 11 federal organizations. Given our findings regarding the quality and significance of sustainable development strategy commitments over the past decade, we did not carry out additional work this year to determine whether the commitments we examined were based on an examination of good practices elsewhere or on an assessment of the social, economic, and environmental impact of each department's key policies and programs. Consequently, we do not comment on the significance or relevance of the commitments we examined this year.

Why it's important

Through their policies, programs, and regulations, and the billions of dollars they spend each year, federal departments and agencies have a significant influence on just about every aspect of Canadian society.

In establishing its expectations for sustainable development strategies, the government recognized that Canada's economic health depends on its environmental health. It indicated that the strategies would help shape a better future for all Canadians.

What we found

- · Eight of the eleven organizations in our audit had integrated structures and processes to effectively plan, implement, and monitor the selected commitment and could demonstrate some achieved results.
- Some of the commitments we examined on greening operations were related to the government-wide targets established by the federal Office of Greening Government Operations. Although we did not re-audit the Office of Greening Government Operations, we found in our work last year that the government-wide targets in this area were not specific and that the government was not in a position to know what progress it was making in greening its operations.

Introduction

- 4.1 In 1995, Parliament amended the Auditor General Act, requiring the ministers of designated departments and agencies to prepare sustainable development strategies, table them in Parliament, and update them at least once every three years. For assistance in holding the government to account, Parliament also directed the Commissioner of the Environment and Sustainable Development to monitor implementation of the strategies and report annually on progress.
- **4.2** Today, 32 departments and agencies prepare sustainable development strategies. This is the Commissioner's 11th annual audit report on the strategies.
- 4.3 The aim of the strategies is to make sustainable development an integral part of the mandate of each department and agency. Federal departments and agencies are to use the strategies to identify their sustainable development objectives. They are to develop concrete action plans for achieving these objectives, with clear benchmarks or expected results against which progress toward sustainable development can be measured. The requirement to table sustainable development strategies in Parliament was seen as a strong motivator for departments to take environmental issues into account when making management decisions.
- 4.4 In addition to the 1995 guidance provided to departments, the Commissioner has twice issued guidance on good management practices for sustainable development strategies. Nevertheless, our past reports have consistently noted that departments and agencies have made little progress in applying the principles set out in the guidance provided to them or in establishing good management practices for their sustainable development strategies. Our reports included several recommendations to departments and central agencies on these points.
- 4.5 In our October 2007 Report, Chapter 1, Sustainable Development Strategies, we noted that the strategies we had examined still were not substantive plans for sustainable development. We found little evidence that the strategies had encouraged federal organizations to integrate environmental protection with economic and social issues when developing policy proposals or managing programs and activities. We concluded that the individual strategies and the process of producing them were not realizing their full potential. We further noted that the federal government had still not acted on its repeated commitment to produce an overall plan, including clear goals to guide the efforts of individual entities, and it was not clear to us whether or

how departments and agencies had been held accountable by the government throughout the past decade for the generally poor quality of strategies. We said that parliamentarians could have no assurance that the sustainable development strategies of federal organizations were delivering progress toward sustainable development.

- **4.6** We recommended that the federal government specify
 - federal goals for sustainable development, including specific performance expectations, indicators, and targets that will serve as objectively verifiable benchmarks against which progress can be measured:
 - how departmental sustainable development strategies should fit
 with and contribute to the achievement of the federal goals, and
 how existing tools such as strategic environmental assessment
 should fit with and contribute to departmental sustainable
 development strategies;
 - the strengths, weaknesses, opportunities, and constraints associated with the current approach to producing, implementing, and reporting on departmental sustainable development strategies, including the key opportunities for improvement; and
 - roles and responsibilities, including what departments and central agencies must do what to ensure that the opportunities for improvement are acted on, that the government's expectations for sustainable development strategies are met, and that key parties have the necessary authority and are held accountable.
- 4.7 The government accepted our recommendation and committed to performing a review led by Environment Canada, for completion by the end of October 2008. In May 2008, Environment Canada told us that it had developed a log to track the different facets of the review, had examined relevant documentation and had completed an analysis of the strengths, weaknesses, opportunities, and constraints associated with the current approach to producing sustainable development strategies. The Department also told us it was on schedule to finalize the review by October 2008.
- 4.8 In June 2008, Parliament passed the Federal Sustainable Development Act. The Act incorporates key aspects of our 2007 recommendation. Under the legislation, the government is to develop a Federal Sustainable Development Strategy that specifies measurable goals and targets for sustainable development, departments and agencies are to prepare their own strategies that comply with and contribute to the government-wide strategy, and Environment Canada

is to monitor implementation and report on progress. Environment Canada has informed us that as a consequence of the Act, its review will focus on experience to date and implementation of the new legislative requirement.

- **4.9** The Commissioner also has some new duties under the Act. For example, the Commissioner is required to
 - examine a draft of the Federal Sustainable Development Strategy from the perspective of the external auditor,
 - provide comments to the Minister of the Environment about whether the targets and implementation strategies can be assessed,
 - examine the extent to which entities subject to the Act have contributed to meeting the targets set out in the government-wide strategy and have met the objectives and implemented the plans set out in their own organizations' strategies, and
 - assess the fairness of information presented in the government's reports on the progress of the federal strategy.

Focus of the audit

- 4.10 This audit began prior to passage of the 2008 Federal Sustainable Development Act and was carried out in accordance with our legal obligation under the Auditor General Act (1995). This year, pending the government's review and implementation of the Federal Sustainable Development Act, we examined implementation of one commitment each from the 2007–2009 strategies of eleven federal organizations.
- **4.11** We sought to determine whether each of these departments and agencies had integrated structures and processes to effectively plan, monitor, and review implementation of its selected commitment, and whether each could identify some achieved results.
- **4.12** Given our findings regarding the quality and significance of sustainable development strategy commitments over the past decade, we did not carry out additional work this year to determine whether the commitments we examined were based on an examination of good practices elsewhere or on an assessment of the social, economic, and environmental impact of each organization's key policies and programs. Consequently, we do not comment on the significance or relevance of the commitments we examined this year.
- **4.13** The 11 commitments we selected are only a few of those contained in the sustainable development strategies tabled by departments and agencies in December 2006. Our findings on the

implementation of the selected commitments are not necessarily representative of each organization's overall progress in implementing its strategy or progress toward sustainable development in general.

4.14 More details on the objective, scope, approach, and criteria are in About the Audit at the end of this chapter.

Observations

Value of a well-functioning management system

- 4.15 In several previous reports of the Commissioner (including those for 1999, 2000, 2006, and 2007), we noted the clear link between well-functioning management systems and demonstrable progress on sustainable development strategy commitments. Again this year, we found that most departments and agencies that could demonstrate some results had well-functioning management systems in place for planning, implementing, and tracking progress on the commitments we selected for audit (Exhibit 4.1).
- **4.16** Eight departments and agencies had integrated structures and processes in place to effectively plan, implement, and monitor the commitment we had selected for audit, and could demonstrate some achieved results:
 - Atlantic Canada Opportunities Agency,
 - Canadian Environmental Assessment Agency,
 - Department of Finance Canada,
 - Economic Development Agency of Canada for the Regions of Quebec,
 - Foreign Affairs and International Trade Canada,
 - Human Resources and Social Development Canada,
 - National Defence, and
 - · Parks Canada.
- 4.17 The Canada Public Service Agency, Citizenship and Immigration Canada, and Correctional Service Canada could not provide evidence that they had achieved expected results or had effectively planned, monitored, and tracked progress on the commitment we had selected for audit.

 $\textbf{Exhibit 4.1} \quad \textbf{Most of the 11 organizations examined achieved progress on selected 2007-2009 sustainable development strategy (SDS) commitments \\ \textbf{Exhibit 4.1} \quad \textbf{Most of the 11 organizations examined achieved progress on selected 2007-2009 sustainable development strategy (SDS) commitments \\ \textbf{Exhibit 4.1} \quad \textbf{Most of the 11 organizations} \quad \textbf{Exhibit 4.1} \quad \textbf{Most of the 12 organizations} \quad \textbf{Exhibit 4.1} \quad \textbf{Most of the 12 organizations} \quad \textbf{Exhibit 4.1} \quad \textbf{Most of the 13 organizations} \quad \textbf{Exhibit 4.1} \quad \textbf{Most of the 14 organizations} \quad \textbf{Exhibit 4.1} \quad \textbf{Most of the 14 organizations} \quad \textbf{Exhibit 4.1} \quad \textbf{Most of the 15 organizations} \quad \textbf{Exhibit 4.1} \quad \textbf{Most of the 15 organizations} \quad \textbf{Most of the 14 organizations} \quad \textbf{Most of the 15 organizations} \quad \textbf{Most of the 15 organizations} \quad \textbf{Most of the 15 organizations} \quad \textbf{Most of the 16 organizations} \quad \textbf{Most of the 17 organizations} \quad \textbf{Most of the 18 organizations} \quad \textbf{Most of the 18 organizations} \quad \textbf{Most of the 19 organizations} \quad \textbf{Most of$

	Commitment	What we found
Atlantic Canada Opportunities Agency (ACOA)	Improved, sustainable community infrastructure: up to 175 "green" infrastructure projects funded through the Agency by 2010.	We found that ACOA approved 59 green infrastructure projects and had plans to meet its commitment under the Agency's sustainable development strategy by 2010. However, ACOA's 2007–08 Report on Plans and Priorities includes a one-year target of 197 green municipal infrastructure projects. That is significantly higher than its three-year SDS target of 175 green infrastructure projects. While this SDS commitment is clearly linked to the Agency's Program Activity Architecture, SDS target setting could be better integrated with the annual planning cycle, and the Agency could set more challenging targets.
Canada Public Service Agency (CPSA)	The Corporate Services Branch of the Agency will work with Public Works and Government Services to divert 75 percent of waste at L'Esplanade Laurier and other occupied buildings (by 2007) through the redesign and implementation of an updated recycling program, including improvement to take-back and hazardous materials programs.	CPSA did not meet its target to achieve a 75 percent waste diversion rate by 2007 for any of the buildings it occupies. With the exception of L'Esplanade Laurier, no data was collected on waste diversion rates in buildings occupied by the Agency. We noted that CPSA has updated its recycling program and implemented new composting programs. Agency officials are confident that they will meet their 75 percent target rate for waste diversion at L'Esplanade Laurier in the next waste audit, scheduled for fall 2008.
Canadian Environmental Assessment Agency (CEAA)	The Agency will (by December 2007) develop guidance on meaningful public participation, and policy and skill-building training for engagement of Aboriginal peoples, in federal environmental assessment. The Agency will fund, through its Research and Development Program, projects that provide new understanding and approaches for the meaningful involvement of the public, including Aboriginal peoples, in environmental assessment.	CEAA has developed guidance material on meaningful public participation, as well as policy and skill-building training for the engagement of Aboriginal peoples. Through its Research and Development Program, the Agency has also funded projects that provide new understanding and approaches for the meaningful involvement of the public (including Aborigina peoples) in the environmental assessment process. We noted that CEAA has not updated its SDS management reporting system since 2006. The Agency has a sustainable development champion function but this position has been vacant for several months.
Citizenship and Immigration Canada (CIC)	Take sustainable development considerations into account in immigration-levels planning.	CIC has yet to establish formal guidelines, timelines, and clear, measurable performance expectations to ensure that sustainable development will be taken into account in immigration-levels planning. This commitment was carried over from the Department's previous three-year sustainable development strategy.
Correctional Service Canada (CSC)	Reduction of our water consumption via the implementation of multiple measures to conserve potable water. By March 2010, CSC will reduce its potable water consumption by 10 percent.	Because of a lack of accurate monitoring and reporting by its facilities, CSC is unable to reliably track progress on its commitment.

Most of the 11 organizations examined achieved progress on selected 2007–2009 sustainable development strategy (SDS) commitments (cont'd)

	Commitment	What we found
Department of Finance Canada	By 2009, the Corporate Services Branch will increase purchases of green office furniture from 2005–06 levels by 50 percent where and whenever new fit-up opportunities exist, and where current design configuration permits.	Finance Canada developed green furniture procurement standards, and provided training on green procurement to most acquisition cardholders and materiel personnel. In 2007, 100 percent of office furniture purchases over \$20,000 were green (compared to 79 percent in 2006). Since September 2007, green office furniture purchases are monitored using the new Integrated Financial and Materiel System green procurement tracking field. The Department decided to track purchases under \$20,000 on a prospective basis using the system's green procurement tracking field.
Economic Development Agency of Canada for the Regions of Quebec (CED)	As of 1 April 2007, apply the Strategic Environmental Assessment (SEA) as early as the design of Agency plans, policies, and programs. Anticipated results: Sustainable Development Strategy commitments are integrated in decision-making processes as early as the planning stage.	CED performed SEAs for its two main programs, "Vitality of Communities" and "Competitiveness of Quebec SMEs and Regions." The Agency determined that it did not need to perform SEAs for its other programs. The Agency was also able to show that it has an integrated management system that takes environmental and other impacts into account with regard to the sustainable development of the various projects that it administers. The integrated management system links information compiled by CED officers with the Agency's performance indicators.
Foreign Affairs and International Trade Canada (DFAIT)	Provide funding for the dismantlement of a minimum of five decommissioned Russian nuclear submarines.	Evidence provided by the Department showed that its funding contributed to the de-fuelling of 24 nuclear reactors containing highly enriched uranium in 12 decommissioned Russian nuclear submarines from the 2004–05 fiscal year to the 2007–08 fiscal year. The Department also indicated that dismantling has been completed for 11 of these. The 12th is currently being dismantled under a joint arrangement with the United States and Russia.
Human Resources and Social Development Canada (HRSDC)	Further develop two green processing activities: Processing Automation Initiative and Simplification of Program Delivery Document Requirements. Short-term outcomes: • reduced energy and paper use through service process automation, and • decreased service delivery processing requirements.	Evidence provided by the Department indicates that both components of the commitment have been substantially implemented, and that progress is monitored, measured, and reported on internally. Some results have been identified, and plans are in place for ongoing implementation.
National Defence (DND)	 Developing and integrating where appropriate green procurement modules and messages into all existing training: A green procurement training module is developed by 30 June 2007. A green procurement course is delivered to 100 percent of acquisition cardholders, materiel managers, and procurement personnel by 31 March 2010. 	National Defence developed and approved a green procurement training module in conformance with policies of Public Works and Government Services and Treasury Board. The Department has begun online green procurement training. A firewall issue has restricted access to the course, with the result that only a few acquisition cardholders, materiel managers, and procurement personnel have taken the course thus far. DND officials expressed confidence that the firewall issue will be resolved by fall 2008.

Exhibit 4.1 Most of the 11 organizations examined achieved progress on selected 2007–2009 sustainable development strategy (SDS) commitments (cont'd)

	Commitment	What we found
Parks Canada	Parks Canada will conduct ecological monitoring and reporting on the state of aquatic ecosystems in national parks. Fully functioning ecological integrity monitoring and reporting systems will be developed for all national parks by March 2008.	As of March 2008, 30 of the 39 national parks with aquati ecosystems had fully functioning systems for monitoring and reporting on ecological integrity. For the remaining parks, especially those located in the North, the Agency indicated that it faced challenges in developing systems. The Agency has developed measures for reporting on the ecological integrity of aquatic ecosystems. It has established new Information Centre on Ecosystems, which serves as a repository for summary descriptions, data, and reports relate to national parks. The Agency also hired ecologists and acquired equipment to facilitate monitoring in national parks. We found that the Agency is transparent in its reporting, is effectively managing the implementation of its commitment and is well aware of the challenges it faces.

4.18 Some of the commitments we examined on greening operations were related to the priority areas established by the federal Office of Greening Government Operations. However, in our March 2008 Status Report, Chapter 10, Management Tools and Government Commitments—Greening of Government Operations, we noted that the government-wide targets were non-specific and not consistently incorporated into departmental strategies. We also noted that the government was not in a position to know what progress it was making in greening its operations.

Environment Canada's key role

- **4.19** In response to our October 2007 recommendation, Environment Canada is undertaking a thorough review to identify ways of improving the government's approach to sustainable development strategies. The target date for completing the review is October 2008. The review should help guide implementation of the *Federal Sustainable Development Act*.
- **4.20** As the department responsible for establishing federal sustainable development goals and for monitoring and reporting progress under the *Federal Sustainable Development Act*, Environment Canada has the task of providing clear guidance to departments and agencies on the requirements to be met as well as ensuring that they have the capacity to meet those requirements.

Conclusion

- **4.21** Eight of the 11 organizations we examined—the Atlantic Canada Opportunities Agency, the Canadian Environmental Assessment Agency, the Department of Finance Canada, the Economic Development Agency of Canada for the Regions of Quebec, Foreign Affairs and International Trade Canada, Human Resources and Social Development Canada, National Defence, and Parks Canada—had structures and processes in place to effectively plan, implement, and monitor the selected commitments, and could also demonstrate some achieved results.
- 4.22 Our findings this year do not change our view that the government's approach to the preparation and use of sustainable development strategies over the past decade has not worked. While individual organizations have taken some action in specific areas, there are still no clear federal goals or indicators to clarify the government's expectations for sustainable development strategies or to measure the individual or collective progress of departments and agencies. Consequently, there is as yet no basis for a meaningful assessment of results in relation to the sustainable development strategies.
- The 2008 Federal Sustainable Development Act requires Environment Canada to establish federal sustainable development goals and targets by June 2010 and to provide a progress report at least once every three years after the day on which the Act came into force. As part of the process of developing federal goals and targets for sustainable development and determining which organizations will be responsible for meeting them, we expect Environment Canada to identify means for improving on the previous approach and increasing accountability for results. We look forward to examining progress in our future annual reports.

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About the Audit

Objective

Our audit objective was to determine whether each department and agency

- had integrated structures and processes to effectively manage the implementation of a selected commitment from its sustainable development strategy, and
- · could identify some achieved results.

Scope and approach

As part of our annual monitoring of strategy commitments, we audited the implementation of selected commitments from the 2007–2009 sustainable development strategies of the following 11 organizations:

- · Atlantic Canada Opportunities Agency,
- · Canada Public Service Agency,
- Canadian Environmental Assessment Agency,
- · Citizenship and Immigration Canada,
- · Correctional Service Canada,
- Department of Finance Canada,
- Economic Development Agency of Canada for the Regions of Quebec,
- Foreign Affairs and International Trade Canada,
- Human Resources and Social Development Canada,
- · National Defence, and
- · Parks Canada.

In establishing the list of entities subject to the audit this year, we excluded entities that we had audited six or more times in the past five years, as well as entities that had been audited more than twice in the past two years. We also excluded the Canadian Firearms Centre and Public Safety Canada, since they did not table sustainable development strategies for the 2007–2009 period.

In selecting commitments to be audited, our criteria included auditability and availability of evidence, as well as the time elapsed since the commitment was made. This was to ensure we could reasonably expect to find progress or completion of the commitment at the time of our audit. We also asked the organizations involved to suggest commitments they considered to be of particular importance in advancing their sustainable development strategies. In addition, we considered the relevance to current or previous audit work conducted by the Commissioner of the Environment and Sustainable Development.

Various audit teams of the Office of the Auditor General conducted the work. For example, the audit team responsible for Finance Canada audited that department's commitment. Preliminary evidence for our examination was collected through a questionnaire that asked for a detailed description of the status of the commitment and the progress made by the department or agency on that commitment. After a review of completed questionnaires, the Office's entity teams conducted further investigations involving interviews with key officials and requests for additional documentation.

Our assessment applies only to the 11 commitments we examined and is not necessarily representative of the overall progress made by each department or agency in implementing its sustainable development strategy.

Given the findings of our previous audits during the last decade and the conclusions of our October 2007 Report, Chapter 1, Sustainable Development Strategies, we did not carry out additional work to determine whether the selected commitment was relevant to the mandate of each department or agency, or whether the departments and agencies base their strategy commitments on an examination of good practices elsewhere. Consequently, we do not comment on the quality or relevance of the commitments we examined.

Criteria

Listed below are the criteria that were used to conduct this audit and their sources.

Criteria	Sources
The departments and agencies should provide evidence of progress on implementation of the selected commitment,	ISO 14001 Environmental Systems Handbook, 2nd ed., 2004
and have the systems and procedures in place to manage implementation of the selected commitment.	Government of Canada, A Guide to Green Government, Section III, Minister of Supply and Services, 1995
The departments and agencies should manage implementation of their commitments effectively, from short term outputs to long term outcomes. Effective management would include	Office of the Auditor General and Treasury Board of Canada Secretariat, Modernizing Accountability Practices in the Public Sector, 1998
 planning for implementation of the commitment by documenting timelines, responsibilities, and performance expectations; 	Treasury Board of Canada Secretariat, Preparing and Using Results-Based Management and Accountability Frameworks sections 3 and 4, 2005
 monitoring, documenting, and reporting the actions taken and results achieved; and 	
 reviewing the sufficiency of the actions taken and identifying necessary corrective action. 	
The departments and agencies should have implemented and monitored their commitments as specified in their strategies.	Government of Canada, A Guide to Green Government, Minister of Supply and Services, 1995

In accordance with our October 2007 Report, Chapter 1, we also considered

- the requirements of the commitment;
- the complexity of the commitment;
- the amount of time that had elapsed since the commitment was made;
- · whether actions had led to demonstrable results; and
- whether significant changes had occurred since the commitment was made, such as a reorganization (splitting or merging) of departments or agencies.

All work was conducted to an audit level of assurance.

Audit work completed

Audit work for this chapter was substantially completed on 27 May 2008.

Additional work was carried out to review the requirements of the Federal Sustainable Development Act after it was passed on 26 June 2008.

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Chapter

5

Annual Report on Environmental Petitions



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Annual Report on Environmental Petitions

Main Points

What we examined

Established in 1995 as a result of amendments to the Auditor General Act, the environmental petitions process provides Canadians with a formal means to bring their concerns about environmental issues to the attention of federal ministers and departments and to obtain a response to their concerns. Ministers are required to respond in writing within 120 days. On behalf of the Auditor General of Canada, the Commissioner of the Environment and Sustainable Development manages the environmental petitions process and monitors responses of federal ministers. As required by the Act, the Commissioner reports annually on the quantity, nature, and status of petitions received and on the timeliness of departmental responses. This chapter contains this year's annual report on petitions.

Why it's important

Environmental petitions are a simple, unique feature of our parliamentary democracy. Submitting a petition is a way for Canadians to bring their environmental concerns to the attention of federal departments and agencies that are subject to the process. Monitoring and reporting on petitions and petition responses, as well as publishing those documents on our website, contributes to transparency in federal environmental management. The Office of the Auditor General also helps to promote federal accountability for environmental management by considering the issues raised in petitions and the responses they generate when it plans and conducts audits.

What we found

- This year, we received 56 petitions—a 24 percent increase over last year. While petitions were submitted from petitioners residing in seven provinces and one territory, Ontario accounted for more than half of the petitions received.
- Human and environmental health, environmental assessments, and water are the top issues raised in petitions this year. More than half of the petitions were grouped around a number of specific issues, with the largest group concerning the effects of exposure to electromagnetic radiation, which we highlighted as an emerging issue in last year's annual report.

- A number of issues raised in petitions have been of interest to members of Parliament. Issues raised by petitioners have also received media coverage in the past year, ranging from newspaper articles to television documentaries and radio interviews
- The 200 responses requested from departments and agencies this year represented a significant increase over last year. Environment Canada continues to account for the largest number. The proportion of responses provided within the required 120 days decreased overall, from 95 percent last year to 86 percent this year. Two departments, Environment Canada and Indian and Northern Affairs Canada, accounted for more than 70 percent of the late responses, while Fisheries and Oceans Canada and Industry Canada improved the timeliness of their responses this year.

Introduction

- 5.1 The environmental petitions process is a formal way for Canadians to bring their questions and concerns about the environment and sustainable development to the attention of federal ministers. The process was created by amendment to the *Auditor General Act* in 1995. It allows any Canadian resident to submit an environmental petition to the Auditor General of Canada for forwarding to the responsible federal minister or ministers and obtain a timely response. The petitioner may act alone or on behalf of an organization, business, or municipality. The Commissioner of the Environment and Sustainable Development (CESD) administers the process on behalf of the Auditor General of Canada (Exhibit 5.1).
- **5.2** A petition must be in written form and it must address an environmental matter in the context of sustainable development. The matter must also be the responsibility of a federal department or agency subject to the petitions process. Unlike a typical petition, it does not require multiple signatures; however, it must be submitted and signed by at least one resident of Canada. If the petition is being submitted on behalf of a group (for example, an organization or association), it must be signed by a representative of the group.
- **5.3** Requests made and issues raised in petitions vary widely. For example, requests may include asking ministers to explain federal policy, investigate environmental problems, examine the enforcement of environmental legislation, or review and improve environmental laws and regulations. Issues raised in petitions over the years include protection of species at risk, environmental and health impacts of contaminated sites or toxic substances, and environmental assessments of projects.
- **5.4** Once federal ministers receive a petition, they must respond within 120 calendar days. Ministers and departments are required only to respond to petitions within the time periods set in the *Auditor General Act*. They are not obligated to carry out remedial action to resolve the issues raised by petitioners.

Focus of the chapter

- 5.5 The purpose of this chapter is to report to Parliament and Canadians on the use of the petitions process and on our monitoring of petitions received between 1 July 2007 and 30 June 2008.
- 5.6 More details on our objective, scope, and approach are in **About** the **Chapter** at the end of this chapter.

Enable: The environmental petitions process and the role of the Commissioner of the Environment and Sustainable Development

The environmental petitions process was established under the *Auditor General Act* in 1995. It is a way for Canadians to take action on environmental issues that they care about. The federal government is the focus of the petitions process. The Commissioner of the Environment and Sustainable Development oversees the petitions process on behalf of the Auditor General.

Starting a petition	A Canadian resident submits a written petition to the Auditor General of Canada.			
Reviewing a petition	The Commissioner's team reviews the petition to determine if it meets the requirements of the <i>Auditor General Act</i> .			
	If the petition is accepted, the team will	If the petition is not accepted, the petitioner will be informed in writing.		
	 determine the federal departments and agencies responsible for the issues addressed in the petition; 	If the petition is incomplete or unclear, the petitioner will be asked to modify and re-submit it.		
	send it to the responsible ministers; and			
	 send a letter to the petitioner, listing the ministers to whom the petition was sent. 			
Responding to a petition	Once a minister receives a petition, he or she must			
	 send a letter, within 15 days, to the petitioner and the Commissioner acknowledging receipt of the petition, and 			
	 consider the petition and send a response to the petitioner and Commissioner within 120 days. 			

Ongoing petitions activities Monitoring Reporting Posting on the Web Auditing The Commissioner monitors Issues raised in petitions are The environmental petitions The Commissioner posts acknowledgement letters and chapter allows the petitions, responses, and considered for audit by the responses from ministers. Commissioner to report to the summary information on Office of the Auditor General. House of Commons on the the Web. number of petitions received, their subject matter and status, and departmental compliance with statutory timelines.

Petitions and Responses Received

5.7 Section 23 of the *Auditor General Act* requires the Commissioner to monitor petition responses from ministers and to report annually to the House of Commons on the number of petitions received, their nature, and their status. This year's annual report also includes a number of observations on the use of the petitions process to highlight good practices and opportunities for improvement.

Use of the petitions process

5.8 This year, we received 56 petitions—a 24 percent increase over last year. Exhibit 5.2 shows that the number of petitions received has increased steadily in recent years.



Exhibit 5.2 The number of petitions received has increased in recent years

- **5.9** Petitions were submitted from petitioners residing in seven provinces and one territory (Exhibit 5.3), with more than half of the petitions originating in Ontario (32 petitions). Residents of British Columbia submitted the second largest number of petitions (7 petitions), followed by Alberta (6 petitions) and Quebec (4 petitions).
- 5.10 Similar to last year, most petitions continue to come from small groups of people or individual Canadians (68 percent this year), but many grassroots coalitions and local and national organizations also use the petitions process. Other petitioners this year included a First Nations community and an industry association.
- 5.11 An overview of petitions activity during our reporting period (1 July 2007 to 30 June 2008) is in the appendix. It includes summaries of the petitions received during this period. With the consent of the petitioners, petitions and responses are posted in our petitions catalogue on the Office of the Auditor General website (www.oag-bvg.gc.ca). Petitions are posted on the website only after they have been tabled in Parliament.

Exhibit 5.3 Petitions came from across the country (1 July 2007 to 30 June 2008)



Petition No.	Subject	Petition No.	Subject
158B	Follow-up petition on subsidies to the oil and gas industry and on federal efforts to address climate change	228	The federal government's alleged failure to inspect coal-fired power plants for mercury emissions
212B	Follow-up petition on airport expansion in Dorval, Quebec	229	Installation of cellular towers in Simcoe, Ontario
214	Impact of herbicides on fish and fish habitats in northern Ontario	230	Impact of cellular phone transmitters on human health
215	Impact of oil sands development in Alberta	230B	Follow-up petition on the impact of cellular phone transmitters on
216	Request for an environmental assessment of a niobium mine		human health
	project in Oka, Quebec	231	Barrel burning
217	Environmental contamination at a First Nations reserve in Manitoba	232	Radioactive waste cleanup in Port Hope, Ontario
218	Contaminated site in New Harbour, Newfoundland and Labrador	233	Health risks posed by radiation exposure in Port Hope, Ontario
		234	Radioactive contamination in Port Hope, Ontario
218B	Follow-up petition on a contaminated site in New Harbour, Newfoundland and Labrador	235	Health risks posed by electromagnetic radiation exposure from cellular towers
219	Environmental impact of federal Metal Mining Effluent Regulations	235B	Follow-up petition on the health risks posed by electromagnetic radiation
219B	Environmental impact of the <i>Metal Mining Effluent Regulations</i> on fish habitats	236	Nuclear-related environmental health concerns in Port Hope, Ontario
220	Collapse of snow crab fishery in Glace Bay Hole, Nova Scotia	237	Low-level radioactive waste cleanup project in Port Hope, Ontario
221	Health and environmental concerns regarding fluoridation of drinking water	238	Water and sediment contamination of the Athabasca River due to oilsands production
221B	Follow-up petition on health and environmental concerns regarding fluoridation of drinking water	239	Development of the Nahanni National Park Reserve
221C	Follow-up petition on health and environmental concerns	240	Environmental concerns regarding the Cacouna Marsh
	regarding fluoridation of drinking water	241	Mercury waste from compact fluorescent lightbulbs entering the environment
221D	Follow-up petition on health and environmental concerns regarding fluoridation of drinking water	242	Use of road salt at the 2010 Vancouver Olympics Cypress Bowl venue
222	Subsidies to the oil and gas industry and federal initiatives for greenhouse gas emission reductions	243	Use of fluoride (fluorosilicates) in drinking water
223	Green procurement and use of recycled paper by federal government departments	244	Harm to susceptible populations of aquatic life and humans due to the addition of fluoride (fluorosilicates) in drinking water
224	Science underlying the Kyoto Protocol and Canada's action plan on global warming	245	Impact of fluorosilicate compounds on lead levels in drinking water and on water distribution infrastructure
225	Protecting Cat Stream and Jingle Pot Marsh in Nanaimo, British Columbia	246	Potential environmental impacts of a proposed housing development project in Mission, British Columbia
226	Canada's use and export of chrysotile asbestos	247	Environmental health impact of electromagnetic radiation
227	Use of letters of advice and operational statements by Fisheries	248	Environmental impact of toxic chemicals leaking into Lake Ontario
	and Oceans Canada: Impact on the environmental assessment process	249	Potential environmental impact of the Devils Lake outlet project on Canadian waters

Exhibit 5.3 Petitions came from across the country (1 July 2007 to 30 June 2008) (continued)

Petition No.	Subject	Petition No.	Subject		
250	Petition withdrawn	256	Policies and regulations under the Canadian Environmental		
251	Federal policy related to potential bulk freshwater exports		Protection Act, 1999		
252	Environmental health issues related to a hydroelectric transmission project in Tsawwassen, British Columbia	257	Potential environmental and health impacts of soil contaminated with heavy metal and deposited in a landfill near Lake Erie		
253	Potential adverse health effects from phones using Digital Enhanced Cordless Telecommunications	258	Alleged pumping of water contaminated with mercury from a brownfield development into a sewer system near Lake Ontario		
254	Environmental and human health effects of compact fluorescent light bulbs	259	Heath concerns related to the construction of a high-voltage power line in Tsawwassen, British Columbia		
255	Health impact of electromagnetic radiation from	260	Electromagnetic sensitivity		
telecommunication tresidential areas	telecommunication towers located in close proximity to	261	Public participation process related to the Sydney Tar Ponds and Coke Ovens Remediation Project		

Issues raised in petitions

The main concerns are similar to last year's

5.12 As in last year, petitioners' main concerns related to human and environmental health, environmental assessments, and water quality. Issues related to toxic substances replaced compliance and enforcement issues as one of the top concerns for petitioners this year.

The majority of petitions were grouped around specific issues

5.13 Of the 56 petitions received this year, more than half were grouped around several specific issues (Exhibit 5.4). The largest group related to the effects of electromagnetic radiation exposure, which was mentioned as an emerging issue in last year's annual report and was the subject of 11 petitions this year (229, 230, 230B, 235, 235B, 247, 253, 254, 255, 259, and 260).

5.14 Other issues with multiple petitions included

- the impact and cost of fluoride in drinking water, the subject of seven petitions (221, 221B, 221C, 221D, 243, 244, and 245);
- the government's management of radioactive waste in Port Hope, Ontario, an issue going back several years and the subject of six petitions this year (232, 233, 234, 236, 237, and 248);
- contaminated sites, the subject of five petitions (217, 218, 218B, 257, and 261); and
- oil sands development, with four petitions received, including subsidies to the oil and gas industry (158B, 215, 222, and 238).
- 5.15 Other issues raised in petitions this year were the environmental and human health effects of compact fluorescent light bulbs, including the possible leakage of mercury from them (petitions 241 and 254); and the absence of federal policy to protect Canada's freshwater from the possibility of bulk water export and/or diversion (petition 251).

Parliamentarians expressed interest in petitioners' concerns

5.16 Issues raised by petitioners have been of interest to members of Parliament. One of these issues relates to the environmental impact of amendments to the federal *Metal Mining Effluent Regulations* under the *Fisheries Act*, which allow healthy fish-bearing water to be classified as a tailings impoundment area (issue raised in petitions 219 and 219B). This issue is the subject of a private member's bill currently before Parliament, and it received considerable media coverage.

Exhibit 5.4 Main issues with multiple petitions

Electromagnetic radiation exposure

Five petitions deal with the effects of electromagnetic radiation exposure related to the location of a cellular tower in Simcoe, Ontario (petitions 229, 230, 230B, 235, and 235B). The petitioners express concern about a cellular tower that was installed next to their properties, a school, a hospital, and a nursing home—closer than the federal government's Safety Code 6 guidelines permit and without any public consultation. The petitioners are worried about the health effects of the microwave radiation emanating from this tower, and they allege that, since the transmitter was installed, they have suffered physical, and in some cases, financial and emotional harm.

In petition 259, the petitioners raise similar questions in expressing their concerns about the potential health impacts that the construction of a high-voltage power line in a densely populated area of Tsawwassen, British Columbia, could cause to people living near the power lines.

Other petitions raise general questions on the electromagnetic radiation issue. In petition 247, the petitioner alleges that since 1999, scientific research has indicated an increase in health effects related to electromagnetic radiation from cellular towers and other sources. The petitioner asks the government to review Safety Code 6, to pass regulations for safer siting of cellular towers, and to mandate labelling of electromagnetic radiation levels of everyday products.

In petition 255, the petitioners claim that electromagnetic radiation emitted from telecommunication towers is causing significant health issues to people living in close proximity to them. The petitioners raise questions about the objectivity of scientific studies supporting the government's position on potential health hazards, as well as about the perceived independence of departmental staff assessing these studies.

In petition 260, the petitioner alleges that little research is being conducted to understand the pain and discomfort due to electromagnetic sensitivity and to help people suffering from it. The petitioner wants to know what the federal government has done to acknowledge and deal with this illness and to warn Canadians of the dangers of electromagnetic fields.

Other petitioners raise more specific questions about the potential health effects from electromagnetic radiation. For example, petition 253 raises questions about the effects of radiation from cordless phones using Digital Enhanced Cordless Telecommunications. Petition 254 states that, apart from emitting radio frequency radiation, energy-efficient compact fluorescent light bulbs also emit ultraviolet (UV) radiation, cause electrical pollution, and contain mercury content, which makes them hard to dispose of safely.

Exhibit 5.4 Main issues with multiple petitions (continued)

Fluoride in drinking water

The potential environmental and health impacts of adding fluoride to drinking water was the subject of another significant group of petitions in 2007–08. One petitioner submitted four petitions on the impact and cost of fluoride in drinking water (petitions 221, 221B, 221C, and 221D). The petitioner asks the government to demonstrate the safety of the products currently used to fluoridate drinking water, alleging that they cause harm to humans (dental fluorosis), aquatic life (destruction of salmon stocks), flora, and the environment. The petitioner questions the government's plan for protecting the environment as well as at-risk groups, such as children and the elderly, from fluoride in water and food. Petition 244 raises similar points.

Other petitions on the impact of fluoride in water focus on issues such as the government's definition, management, and regulation of fluoride (petition 243), as well as the potential detrimental effect on water distribution infrastructure (petition 245).

Radioactive waste in Port Hope, Ontario

A number of petitions were submitted this year about different aspects of the government's management of **low-level radioactive waste** in Port Hope, Ontario. Petitioners are concerned about the extent of the contamination in the town, specifically at one elementary school (petitions 232 and 234), and the potential health impacts from exposure to the low-level radioactive waste, as well as to toxic chemicals that allegedly leaked into Lake Ontario from a uranium processing facility (petition 248).

The federal government's Port Hope Long-Term Low-Level Radioactive Waste Management Project was the subject of a number of petitions. Issues raised by petitioners include the scope and assessment of the cleanup project and the health risks posed (petition 232); the associated environmental assessment process (petition 234); and the management of the project in terms of time and budget (petition 237). One petitioner raises questions about the level of environmental assessment normally done for nuclear projects and requests that human health considerations be included among the criteria for environmental assessments and the licensing of nuclear projects (petition 236).

In petition 233, the petitioner raises concerns about health risks posed by exposure to radiation and about the levels of radiation considered allowable in Canada. The petitioner questions the way that Canada establishes allowable radiation levels. Other petitioners request that health studies and investigations be done to assess and monitor the health of the Port Hope community (petition 236) and raise questions on previous health studies conducted in the community (petitions 232, 233, and 236).

Source: Submitted petitions

The media has covered various issues raised in petitions

5.17 Over the past year, the media has covered a number of current issues that were also raised in petitions. This coverage has included newspaper articles, television documentaries, and radio interviews. For example, the environmental impact of oil sands development was the subject of a number of television documentaries, such as the Canadian Broadcasting Corporation's presentation of "Crude Awakening" and "Du sable dans l'engrenage" shown by Radio-Canada.

Low-level radioactive waste—All forms of radioactive waste except spent nuclear fuel (which is high-level waste) and waste resulting from uranium mining, milling, and mill tailings.

5.18 There were also reports on the potential environmental impact of the United States Devils Lake outlet project on the Red River and Lake Winnipeg, an issue raised in petition 249. In addition, a number of articles were written on the environmental impact of brominated flame-retardants (known as polybrominated diphenyl ethers), which was the subject of several petitions, including petition 204. The media also covered petition issues at the local level—for example, a local radio interview related to issues raised in petition 240 about the protection of Cacouna Marsh in Quebec from industrial activity.

Timeliness of responses

- This year, departments and agencies prepared 200 responses to petitions, which represented a significant increase from the 128 the previous year. Environment Canada continues to account for the largest number, being responsible for 45 responses compared with 33 in 2006–07. Health Canada, Fisheries and Oceans Canada, Natural Resources Canada, and Indian and Northern Affairs Canada also recorded increases in the number of responses prepared.
- **5.20** We noted a decrease in the number of on-time responses: 86 percent of responses were on time compared with 95 percent last year. Nine departments responded late to at least one petition (Exhibit 5.5). Two of these departments, Environment Canada (with 14 late responses out of 45) and Indian and Northern Affairs Canada (with 7 late responses out of 13), accounted for about 70 percent of the late responses.
- The number of days late for a response in 2007–08 ranged from 1 to 89 days. We noted that, in several cases, departments missed the 120-day deadline by three days or fewer. Overall, the average number of days late was 12 days. Indian and Northern Affairs Canada had the highest average number of days late for its responses (29 days). We noted improvements from last year in timeliness for Fisheries and Oceans Canada (80 to 96 percent) and Industry Canada (86 to 100 percent).
- 5.22 The Auditor General Act allows a federal minister to obtain an extension to the 120-day timeline when more time is required to respond to a petition. This year, extensions were requested in 10 cases. A response is not considered to be late if the department notifies the petitioner that an extension will be required before the 120-day timeline. When extensions are necessary, we advise departments to specify, if possible and as a courtesy to petitioners, the additional time required to respond.

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Exhibit 5.5 Timeliness of petition responses due between 1 July 2007 and 30 June 2008

Department/Agency	Number of responses due	Number of late responses	Percentage on time (%)	Extension requested*
Agriculture and Agri-Food Canada	5	0	100	0
Atlantic Canada Opportunities Agency	1	0	100	0
Canada Border Services Agency	2	1	50	0
Canada Economic Development for Quebec Regions	2	0	100	1
Canada Public Service Agency	1	0	100	0
Canada Revenue Agency	1	0	100	0
Canadian Heritage	1	1	0	0
Canadian International Development Agency	2	0	100	0
Citizenship and Immigration Canada	1	1	0	0
Environment Canada	45	14	69	1
Finance Canada	4	0	100	0
Foreign Affairs and International Trade Canada	4	0 .	100	1
Fisheries and Oceans Canada	24	1 .	96	3
Health Canada	27	1	96	1
Human Resources and Social Development Canada	2	0	100	1
Indian and Northern Affairs Canada	13	7	46	0
Industry Canada	9	0	100	0
Justice Canada	3	0	100	0
National Defence	3	0	100	0
Natural Resources Canada	23	0	100	1
Parks Canada Agency	3	0	100	0
Public Health Agency of Canada	3	1	67	0
Public Safety Canada	1	0	100	0
Public Works and Government Services Canada	3	0	100	1
Transport Canada	11	0	100	0
Treasury Board of Canada Secretariat	4	2	50	0
Veterans Affairs Canada	1	0	100	0
Western Economic Diversification Canada	1	0	100	0
Total	200	29	86	10

^{*}Note: A response is not considered to be late if an extension to the 120-day timeline is requested before the due date.

Highlights of petition responses

We monitor and review petition responses

- 5.23 As part of our monitoring role, we review petition responses that departments have sent to petitioners to see if all the questions raised by petitioners have been addressed. If a response does not answer the questions or address the concerns raised in a petition, the Commissioner may bring that observation to the attention of the departments concerned. However, the *Auditor General Act* does not grant the Commissioner power to compel federal authorities to take the necessary action to solve environmental problems. The following paragraphs include highlights of responses to petitions received this year.
- 5.24 The state of environmental health research in Canada. In petition 201, the petitioner raises questions on the state of environmental health research and policy in Canada. The petitioner asks the federal government for information related to federal funding for environmental health research, a national environmental health strategy, statistics quantifying the amount of disease or death caused by environmental risks, and identification of geographic areas in Canada subject to a disproportionate share of pollution.
- The response, submitted jointly by Health Canada and Environment Canada, provides detailed information to answer many of the questions raised. The departments state that investments in environmental health research, based on available information from organizations under the responsibilities of the Minister of the Environment and the Minister of Health, increased from \$41.7 million in the 2001–02 fiscal year to \$66 million in the 2006–07 fiscal year. The departments also describe initiatives aimed at improving surveillance and tracking to support the government's policies and programs on environmental health. For example, they state that the government is currently developing a set of environmental health indicators and will report on them following extensive consultations with relevant stakeholders. In addition, they indicate that Statistics Canada is carrying out the Canadian Health Measures Survey between 2007 and 2009, which will collect information from Canadians about their health. The survey includes a bio-monitoring component to measure levels of environmental chemicals in humans.
- **5.26** Herbicides used in forestry operations. In petition 214, the petitioner raises concerns about the risks associated with the use of herbicides in forestry operations. The petitioner alleges that herbicides, such as 2,4 Dichlorophenoxyacetic acid (2,4-D) and glyphosate, were deposited by some forest management companies into Ontario waterways containing fish. The petitioner is concerned that the

contamination of these waterways poses a threat to the environment and the health of the residents of northern Ontario, who may eat the fish or drink the water. The petitioner requests information and asks the federal government to investigate these alleged violations.

- 5.27 In their responses, Health Canada and Environment Canada provide lists of published documents and literature reviewing the health and environmental effects of the two herbicides, as requested in the petition. The departments indicate to the petitioner that they did not have any information about the environmental interaction and impact of these two herbicides used in combination. Health Canada also indicates that the Pest Management Regulatory Agency recently completed the re-evaluation of 2,4-D and that its proposed decision is available on the Agency's website. Health Canada also indicates that the Agency is currently addressing comments received in response to that proposal prior to publishing a final decision on all products containing 2,4-D.
- **5.28** In addition, based on the occurrences described in the petition, Environment Canada indicates that Ontario Region enforcement officers will conduct an inspection to verify compliance with the *Fisheries Act*.
- **5.29** Impact of scrap-metal storage activities. In petition 206, the petitioner raises concerns about the potential impact of scrap-metal storage activities in the Gros-Cacouna port (Quebec) on the quality of water in the St. Lawrence River, on marine ecosystems, and on species at risk.
- 5.30 Environment Canada, Transport Canada, and Fisheries and Oceans Canada provided a joint response explaining their respective roles and mandates regarding this issue. In response to a specific question, Transport Canada indicates that it asked the port tenant to test the leachate emanating from the scrap metal stored at the dock for several parameters, such as cyanides, cadmium, PCBs, mercury, lead, oil and grease, as well as any other element that might be present.
- 5.31 Use of recycled paper by federal departments and agencies. In petition 223, the petitioner wants to know the percentage of recycled paper that federal departments and agencies are using for internal documents and publications. This petition was sent to all of the federal departments and agencies subject to the petitions process, with the exception of Environment Canada, which the petitioner claimed was already using products that are approved by the Forest Stewardship Council.

5.32 Most of the departments provided information and statistics about their use of recycled paper for internal documents and publications. In addition, a number of departments committed to increasing the use of recycled and third-party certified paper.

Limitations of petition responses

- **5.33** While petition responses may provide detailed information, as shown in the examples in the previous section, departments and agencies may not always be able to provide fully informative responses. This may occur when the petition issues involve the following matters:
 - Litigation. The subject of the petition is currently before the courts or relates to ongoing investigations or imminent legal action.
 - Cabinet confidences. These are records or any information in records that describe the individual or collective decision- and policy-making process of ministers or Cabinet, including records on proposed legislation or regulations (examples include records of Cabinet decisions, Cabinet agendas, committee reports and memoranda to Cabinet, Treasury Board submissions, and Treasury Board decisions).
 - Legal opinions. The Department of Justice Canada cannot refer to legal opinions it has prepared for departments or agencies; nor can it provide legal opinions to individuals.
 - Issues beyond federal jurisdiction. Federal departments may not respond to some questions if they address issues that are primarily the responsibility of provinces or municipalities or if they fall under the responsibility of another entity that is not subject to the petitions process.
 - **Personal opinions.** Ministers generally do not respond to requests for personal opinions on the benefit of existing or proposed legislation, policy, programs, plans, and initiatives.

Opportunities for improvement

5.34 Based on our monitoring of petitions and responses received this year, we describe in the following paragraphs some good practices and opportunities for improvement that we identified.

Petitioners can make their petitions more effective

5.35 Take advantage of the online petitions catalogue. As described in paragraph 5.13, we received multiple petitions on several specific issues this year. This increases the likelihood of repetitive questions being asked. Our petitions catalogue on the Office of the Auditor General website contains more that 300 petitions received since the petitions process was created in 1995. Before submitting a petition, we encourage

people to visit our website and review this petitions catalogue. The responses to questions posed on similar issues in previous petitions may address some of their concerns, or may form a useful basis for writing new questions.

- **5.36** Consider coordinating efforts. The submission of multiple or repetitive petitions on the same subject requires significant federal resources to respond under the *Auditor General Act*. When organized groups or issue-based networks are submitting environmental petitions, we suggest that they consider coordinating their efforts. If their petitions deal with distinct aspects of the issue and are not repetitive, they may be more effective.
- 5.37 Write petitions clearly and concisely. Several petitions received this year were lengthy, containing more than 10,000 words and up to 80 questions. Although the *Auditor General Act* does not specify restrictions on the length of petitions, in our experience it is to petitioners' and departments' advantage to limit petitions to a maximum of 5,000 words and 20 questions or requests. We believe that the public is more inclined to read petitions if they are concise. In addition, departments and agencies have limited resources to review, assess, and prepare timely responses to petitions. It is important that petitioners be as clear and concise as possible when writing their petitions. To make best use of our limited resources, we reserve the right not to publish petitions in the online petitions catalogue on our website should they exceed the suggested limits.
- **5.38** Ensure that language is appropriate and information is accurate. Petitioners are responsible for statements made in their petitions. Petitioners should avoid using defamatory or intemperate language and should avoid making allegations that are not well supported by facts, as this could expose the petitioners to legal action. All information, including confidential documents, submitted with a petition is subject to the Access to Information Act. This means that the Office of the Auditor General may be required to provide this information to individuals requesting it under that Act. Petitioners are therefore cautioned not to submit personal or private documents with their petitions.

Departments can ensure that their responses are clear and complete

5.39 Indicate responsibility for questions. When a petition is sent to multiple departments, they can choose to provide a joint response or to respond separately within their area of responsibility. In the latter case, we encourage departments to clearly indicate which questions

they are responsible for responding to. We noted this year that most departments provided well-structured responses—for example, they repeated the petitioner's question and question number, followed by their response to that question. We found that this structure makes it easier for the petitioner to determine if all of the questions have been answered, and who has answered them.

5.40 Address petitioner's requests. As part of our monitoring role, we review responses to petitions to determine whether a department addressed the petitioner's questions and requests. In a few cases, we found that, while a department answered the questions, some responses were vague and conveyed little meaningful information. A number of petitioners contacted our Office or sent follow-up petitions expressing concerns that departments had not adequately addressed the issues they raised in their petition. Departments can contribute to the efficiency and effectiveness of the petitions process by providing, to the extent possible, responses that clearly and fully address all matters raised by petitioners. We also encourage departments to clearly explain why they are unable to answer certain questions.

The Commissioner will continue to review and improve the petitions process

5.41 Building on our October 2007 retrospective study, the petitions team began an awareness campaign to let environmental non-governmental organizations and groups know about the environmental petitions process. We also made similar presentations explaining the process to department officials. A new guide to the environmental petitions process will be released in 2008 to provide guidance to Canadians wishing to submit a petition.

Conclusion

- 5.42 The environmental petitions process allows Canadians to bring their questions and concerns about the environment and sustainable development to the attention of federal ministers. In 2007–08, they did so in record numbers, with 56 petitions being submitted.
- 5.43 Human and environmental health issues remain the top concern of petitioners. We also noted that more than half of the petitions received this year were grouped around several specific issues. When organized groups or issue-based networks are submitting

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environmental petitions, we suggest that they consider coordinating their efforts. If their petitions deal with distinct aspects of the issue and are not repetitive, they may be more effective.

- **5.44** The percentage of on-time responses by departments decreased this year, with two departments accounting for 70 percent of the late replies.
- 5.45 The Commissioner will continue to look for ways to enhance and improve the petitions process so that it continues to be an effective tool for Canadians wishing to bring environmental issues to the attention of federal ministers.

About the Chapter

Objective

The objective of this chapter is to inform Parliament and Canadians about the use of the petitions process. In accordance with sections 22 and 23 of the *Auditor General Act*, the chapter describes the number, nature, and status of petitions received, and the timeliness of responses from ministers.

Scope and approach

The annual report on petitions summarizes monitoring of the petitions process by the Commissioner of the Environment and Sustainable Development within the Office of the Auditor General of Canada. It covers the period from 1 July 2007 to 30 June 2008. The appendix provides summaries of the petitions received during this reporting period.

Work completed

Work for this chapter was substantially completed on 17 July 2008.

Team

Principal: Paul Morse Director: David Willey

Hélène Charest Roger Hillier Mark Lawrence Lyane Maisonneuve Marie-Soleil Nappert Iosée Perrier

For information, please contact Communications at 613-995-3708 or 1-888-761-5953 (toll-free).

Appendix Petitions activity (1 July 2007 to 30 June 2008)

This appendix includes a summary of the petitions (follow-up and new issues) received during the activity period noted above. To access the full text of petitions and responses from December 1995 to 30 June 2008, go to the petitions catalogue on our website (www.oag-bvg.gc.ca/internet/English/pet_fs_e_919.html). If necessary, paper copies of the catalogue can be obtained on request.

Petition No. 158B: Follow-up petition on subsidies to the oil and gas industry and on federal efforts to address climate change

Date submitted: 20 November 2007

Petitioner(s): Friends of the Earth, Ecojustice Canada, and a Canadian resident

Summary: The petitioners allege that federal tax breaks to the oil and gas industry contradict and undermine government statements and spending on the fight against climate change. They are seeking explanations by federal departments on why tax breaks have been, and continue to be, awarded to oil and gas corporations. They also want to know what the government's stance is on global warming and on greenhouse gas emissions and why the *EnerGuide Program for Low Income Households* was cancelled.

Issues: Aboriginal affairs, air quality, climate change, human health/environmental health, and natural resources

Federal departments/agencies replying: Environment Canada, Finance Canada, Natural Resources Canada Status: Completed

Petition No. 212B: Follow-up petition on airport expansion in Dorval, Quebec

Date submitted: 4 January 2008
Petitioner(s): The Green Coalition

Summary: This follow-up petition concerns the expansion of an airport onto land presently used as a golf course in Dorval, Quebec. The petitioner questions the need to expand the airport and raises a number of concerns about the public consultation and environmental review conducted for the project. The petitioner requests a halt to construction activities until a full environmental assessment and public consultation is conducted.

Issues: Air quality, environmental assessment, governance, human health/environmental health, and transport

Federal departments/agencies replying: Environment Canada, Transport Canada

Status: Completed

Petition No. 214: Impact of herbicides on fish and fish habitats in northern Ontario

Date submitted: 14 August 2007

Petitioner(s): Joel Theriault

Summary: Protecting and preserving northern Ontario waterways from the risks associated with herbicide use in forestry operations is the focus of this petition. The petitioner alleges that there have been numerous unauthorized discharges of herbicides, such as 2,4-Dichlorophenoxyacetic acid (2,4-D) and glyphosate, by forest management companies in Ontario. The petitioner is concerned that the contamination of these

waterways poses a threat to the environment and to the health of the residents of northern Ontario. In addition, the petitioner claims that these actions violate section 36 of the *Fisheries Act*, which prohibits the deposit of deleterious substances into waterways that are frequented by fish. The petitioner presents a series of requests for information and for action to investigate these violations.

Issues: Fisheries, human health/environmental health, pesticides, toxic substances, and water

Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada, Health Canada,

Indian and Northern Affairs Canada

Status: Completed

Petition No. 215: Impact of oil sands development in Alberta

Date submitted: 9 September 2007

Petitioner(s): Pembina Institute, Sierra Club of Canada, and Prairie Acid Rain Coalition

Summary: This petition concerns the recommendations contained in the Oil Sands Consultation—Multistakeholder Committee Final Report, which was submitted to the Government of Alberta on 30 June 2007. The Committee includes representatives from governments, First Nations, Métis, industry, and environmental organizations. The recommendations in the report cover a wide range of issues, including the tax and royalty regime, capital costs allowance, environmental impact assessments, watershed management, research and development, long-term health effects, consultations with First Nations, and transportation safety plans. The petitioners are expecting answers from the Government of Canada about its position on these recommendations, including details of implementation plans.

Issues: Aboriginal affairs, environmental assessment, natural resources, and water

Federal departments/agencies replying: Environment Canada, Department of Finance Canada, Fisheries and Oceans Canada, Health Canada, Indian and Northern Affairs Canada, Natural Resources Canada

Status: Reply (replies) received but not yet posted

Polition No. 216. Request for an environmental assessment of a nichium mine project in Oka, Quehec

Date submitted: 13 September 2007 Petitioner(s): A Canadian resident

Summary: This petition is about a niobium mine project in Oka, Quebec. The petitioner is concerned about potential environmental effects of planned mining activities on water and species at risk in the area. The petitioner alleges that studies done to assess the environmental impact of the project were incomplete and asks the federal government to conduct a full environmental assessment of the project.

Issues: Biological diversity, environmental assessment, human health/environmental health, natural resources, and water

Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada

Status: Completed

Petition No. 217: Environmental contamination at a First Nations reserve in Manifolia

Date submitted: 19 September 2007

Petitioner(s): Mathias Colomb Cree Nation

Summary: This petition concerns contaminated soils on First Nations land in Manitoba. In the 1980s, diesel fuel was discovered in the crawl space of the school, and the area was contaminated with polychlorinated biphenyls (PCB). The buildings and infrastructure were affected —many had to be demolished, and the people in the community had many health issues. The petitioner indicates that many of the recommendations made by different engineering firms over the years, including rebuilding the community and addressing human health issues, still need to be addressed. The petitioner asks questions about the budget figures and specific timelines for dealing with the contamination. The petitioner also asks the Government of Canada to fund a study to look into the possible impact of this contamination on health in the community.

Issues: Aboriginal affairs, environmental assessment, human health/environmental health, and toxic substances

Federal departments/agencies replying: Environment Canada, Health Canada, Indian and Northern Affairs Canada

Status: Completed

Petition No. 218: Contaminated site in New Harbour, Newfoundland and Labrador

Date submitted: 1 October 2007 Petitioner(s): Allan Williams

Summary: This petition is about an alleged failure to adequately treat polychlorinated biphenyls (PCB) contaminants from transformers buried in a landfill site on the New Harbour Barrens in Newfoundland. The petitioner claims that, as a consequence, the health of the local environment is being endangered. He asks the federal government to ensure that the site is properly cleaned up and managed, that offenders are held accountable, and that the health of the area residents is protected.

Issues: Compliance and enforcement, human health/environmental health, toxic substances, transport, and waste management

Federal departments/agencies replying: Environment Canada, Health Canada, Transport Canada

Status: Reply (replies) received but not yet posted

Petition No. 218B: Follow-up petition on a contaminated site in New Harbour, Newfoundland and Labrador

Date submitted: 26 March 2008
Petitioner(s): Allan Williams

Summary: This follow-up petition is about the alleged failure to adequately treat polychlorinated biphenyls (PCB) contaminated waste in a landfill site in New Harbour, Newfoundland and Labrador. The petitioner asks that the PCB-contaminated waste buried in a landfill site be excavated and that the area be thoroughly tested. The petitioner also asks that the government obtain relevant information from owners of companies who were contracted to transport the PCB-contaminated waste and deposit it in the landfill site.

Issues: Compliance and enforcement, human health environmental health, toxic substances, transport, and waste management

Federal departments/agencies replying: Environment Canada

Status: Completed

Petition No. 219: Environmental impact of federal Metal Mining Effluent Regulations

Date submitted: 7 October 2007

Petitioner(s): Mining Watch Canada

Summary: The petitioner alleges that a 2002 regulatory amendment, Schedule 2, to the *Metal Mining Effluent Regulations* approved by Environment Canada and Fisheries and Oceans Canada, lacked sufficient public consultation. The petitioner is concerned that this amendment allows the mining industry to deposit its toxic by-products into healthy lakes and rivers. These water bodies then become "tailing impoundment areas" that have a variety of impacts on water quality, fish, and wildlife. The petitioner asks a number of questions and requests that no other lakes be added to Schedule 2 until full public consultation on this matter has been held.

Issues: Environmental assessment, fisheries, human health/environmental health, natural resources, and water

Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada, Indian and Northern Affairs Canada, Natural Resources Canada

Status: Completed

Petition No. 219B: Environmental impact of the Metal Mining Effluent Regulations on fish habitats

Date submitted: 13 November 2007 Petitioner(s): Mining Watch Canada

Summary: In this follow-up petition, the petitioner asks additional questions about Fisheries and Ocean Canada agreeing to the Schedule 2 amendment to the *Metal Mining Effluent Regulations* and about the impact of the amendment on fish and fish habitats. The petitioner alleges that the Schedule 2 amendment allows the mining industry to turn healthy lakes and rivers into "tailing impoundment areas," by authorizing them to deposit their toxic by-products into lakes and rivers. Among other things, the petitioner asks that a joint panel environment assessment, under the *Canadian Environmental Assessment Act*, be required for any other lakes or rivers being added to Schedule 2.

Issues: Environmental assessment, fisheries, human health/environmental health, natural resources, and water Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada, Indian and Northern Affairs Canada, Natural Resources Canada

Status: Completed

Petition No. 220: Collapse of snow crab fishery in Glace Bay Hole, Nova Scotia

Date submitted: 26 October 2007

Petitioner(s): Area #22 Offshore (Glace Bay Hole)

Summary: The petitioner alleges that the collapse of the snow crab fishery in an area known as Glace Bay Hole, in Nova Scotia, is due to overfishing in three crab-fishing zones. The petitioner also alleges that agreements between Fisheries and Oceans Canada and Area #22 offshore fishermen that related to comanagement and a sustainable development strategy were breached. The petitioner requests a meeting with the Minister to review concerns about the breached agreements, the science advice provided, and the management of this unique area. The petitioner also requests that the boundary line that delineates the fishing area for the snow crab fishermen be reinstated, according to the agreement with Fisheries and Oceans Canada. Finally, the petitioner asks the Treasury Board of Canada Secretariat to review the actions of Fisheries and Oceans Canada to determine whether the Department respected mandated policies and principles.

Issues: Compliance and enforcement, environmental assessment, federal provincial relations, and fisheries Federal departments/agencies replying: Fisheries and Oceans Canada, Treasury Board of Canada Secretariat

Status: Completed

Petition No. 221: Health and environmental concerns regarding fluoridation of drinking water

Date submitted: 19 November 2007

Petitioner(s): Carole Clinch

Summary: The petitioner seeks responses from several departments on the addition to our drinking water of fluoride (hydrofluorosilicic acid), which she alleges contains arsenic, lead, and other toxic substances. She asks departments to provide toxicology studies demonstrating the safety of the chemical compounds currently used to fluoridate drinking water. She also asks departments to warn those involved in the fisheries industry of the effects of water fluoridation on our ecosystem. The petitioner further asks what departments plan to do to protect children and other groups at risk (for example, diabetics) from fluoride in water and food.

Issues: Environmental assessment, fisheries, human health/environmental health, toxic substances, and water

Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada, Health Canada, Indian and Northern Affairs Canada, Natural Resources Canada

Status: Reply (replies) received but not yet posted

Petition No. 221B: Follow-up petition on health and environmental concerns regarding fluoride in drinking water

Date submitted: 7 April 2008 Petitioner(s): Carole Clinch

Summary: In this follow-up petition, the petitioner asks for more responses from several departments about the addition of fluoride (hydrofluorosilicic acid) to our drinking water, which she alleges is causing harm to humans, aquatic life, flora, and the environment. Among other things, the petitioner asks for toxicology reports and studies that demonstrate that the products currently used to add fluoride to drinking water are safe. The petitioner also asks about the potential impact of fluoride on western salmon stocks.

Issues: Environmental assessment, fisheries, human health/environmental health, toxic substances, and water Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada, Health Canada,

Public Health Agency of Canada

Status: Reply (replies) received but not yet posted

Petition No. 221C: Follow-up petition on health and environmental concerns regarding fluoridation of drinking water

Date submitted: 14 April 2008
Petitioner(s): Carole Clinch

Summary: In this follow-up petition, the petitioner seeks further responses from Health Canada regarding the environmental health impacts of adding fluorosilicates to our drinking water, particularly as it relates to dental fluorosis. The petitioner alleges that water fluoridation is the main source of fluoride exposure and therefore

serves as a major cause of dental fluorosis. The petitioner raises questions concerning the perceived social harm, financial burdens, and dental harm caused to Canadians by dental fluorosis.

Issues: Human health/environmental health, toxic substances, and water

Federal departments/agencies replying: Health Canada, Public Health Agency of Canada

Status: Reply (replies) received but not yet posted

Patition No. 2210: Follow-up petition on health and environmental concerns regarding fluoridation of drinking water

Date submitted: 14 April 2008 Petitioner(s): Carole Clinch

Summary: In this follow-up petition, the petitioner seeks further responses from several departments regarding the toxic effects of fluoride added to drinking water. The petitioner alleges that fluoride has been treated differently for risk assessment than other trace elements with similar long-lasting toxic effects. The petitioner asks that the recommended levels for fluoride intake be reduced and that the addition of fluoridation chemicals (hydrofluorosilicic acid and derivatives) to drinking water be discontinued.

Issues: Compliance and enforcement, human health/environmental health, toxic substances, and water Federal departments/agencies replying: Environment Canada, Health Canada, Public Health Agency of Canada

Status: Reply (replies) received but not yet posted

Patition No. 222: Subsidies to the oil and gas industry and federal initiatives for greenhouse gas emission reductions

Date submitted: 12 November 2007

Petitioner(s): KAIROS: Canadian Ecumenical Justice Initiatives

Summary: This petition is about the apparent conflict of objectives in federal government policies related to energy efficiency and greenhouse gas. The petitioner requests information about how the federal government reconciles the apparent contradiction of encouraging the production of fossil fuels, through subsidies to the oil and gas industries, with encouraging the reduction of fossil fuels, through energy efficiency and greenhouse gas reduction initiatives (such as ecoENERGY Renewable and ecoENERGY for Bio-fuels).

Issues: Air quality, climate change, governance, human health/environmental health, and natural resources

Federal departments/agencies replying: Canadian International Development Agency, Environment Canada, Department of Finance Canada, Foreign Affairs and International Trade Canada, Natural Resources Canada

Status: Completed

Petition No. 223: Green procurement and use of recycled paper by federal government departments

Date submitted: 23 November 2007 Petitioner(s): A Canadian resident

Summary: This petition is about the federal government's commitment to implement a green procurement policy. The petitioner asks questions about the percentage of recycled paper being used for publications and

internal documents. The Green Procurement Policy, which was implemented in 2006, seeks to reduce the environmental impact of government operations, by integrating environmental performance considerations in the procurement process. Section 6 of the policy states that "the Government of Canada expects that the application of this policy will benefit the environment by contributing to environmental objectives such as reducing waste and supporting reuse and recycling." The petitioner is concerned that the government is not following through on its commitment to use recycled paper and recommends that all federal departments use paper that contains a minimum of 30 percent post-consumer content and is third-party certified.

Issues: Air quality, climate change, and human health/environmental health

Federal departments/agencies replying: Agriculture and Agri-Food Canada, Atlantic Canada Opportunities Agency, Canada Border Services Agency, Canada Economic Development for Quebec Regions, Canada Revenue Agency, Canadian Heritage, Canada Public Service Agency, Canadian International Development Agency, Citizenship and Immigration Canada, Department of Finance Canada, Fisheries and Oceans Canada, Foreign Affairs and International Trade Canada, Health Canada, Human Resources and Social Development Canada, Indian and Northern Affairs Canada, Industry Canada, Department of Justice Canada, National Defence, Natural Resources Canada, Parks Canada Agency, Public Health Agency of Canada, Public Safety and Emergency Preparedness Canada, Public Works and Government Services Canada, Transport Canada, Treasury Board of Canada Secretariat, Veterans Affairs Canada, Western Economic Diversification Canada

Status: Reply (replies) received but not yet posted

Petition No. 224: Science underlying the Kyoto Protocol and Canada's action plan on global warming

Date submitted: 22 November 2007 Petitioner(s): A Canadian resident

Summary: The petitioner questions whether Environment Canada and the Minister considered the dissenting views on the clarity of climate change science in creating the Department's *Turning the Corner* action plan on global warming. The petitioner asks why these dissenting views were not considered persuasive in reference to five points raised in the petition, including several points on the credibility of historical data.

Issues: Air quality, climate change, governance, human health/environmental health, and science and technology

Federal departments/agencies replying: Environment Canada

Status: Completed

Petition No. 225: Protecting Cat Stream and Jingle Pot Marsi in Nanaimo, British Columbia

Date submitted: 12 December 2007

Petitioner(s): Rory Rickwood and Roger Giles

Summary: The petitioners allege that the Government of Canada's commitment to protecting a fragile ecosystem was ignored during a screening carried out in accordance with the Canadian Environmental Assessment Act. During 2005 and 2006, an asphalt trail (berm) and fencing were built in a fragile aquatic environment that is registered in the government's Sensitive Ecosystem Inventory. The petitioners claim that the asphalt trail contains toxins that are known to be very harmful to mammals, birds, fish, amphibians, and invertebrates and that the page-wire fencing is known to harm low-flying migratory birds. The petitioners ask the responsible departments to provide information about the decisions that led to the building of the trail and fencing. They also question what the departments will do to rectify the situation.

Issues: Environmental assessment, governance, human health/environmental health, and natural resources Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada, Natural Resources Canada

Status: Completed

Polition No. 226: Canada's use and export of chrysotile asbestos

Date submitted: 18 December 2007

Petitioner(s): David Berliner

Summary: This petition is a follow-up to responses received for a previous petition on the use and export of chrysotile asbestos. The petitioner is concerned about Canada's export policies regarding this substance and questions how the Government of Canada is monitoring and ensuring its safe use in importing countries. The petitioner also inquires about the existence of a national surveillance program to keep track of asbestos-related diseases in Canada and of a public registry of buildings in Canada that contain asbestos. See related petition 179 (in the petitions catalogue).

Issues: Air quality, human health/environmental health, international cooperation, natural resources, and toxic substances

Federal departments/agencies replying: Canada Economic Development for Quebec Region, Environment Canada, Foreign Affairs and International Trade Canada, Health Canada, Human Resources and Social Development Canada, Natural Resources Canada, Public Works and Government Services Canada

Status: Completed

Potition No. 227: Use of letters of advice and operational statements by Fisheries and Oceans Canada: Impact on the environmental assessment process

Date submitted: 19 December 2007

Petitioner(s): Martha Kostuch and The Friends of the Oldman River

Summary: The petitioners allege that Fisheries and Oceans Canada's use of letters of advice and operational statements circumvents specific requirements of the *Canadian Environmental Assessment Act*, such as project notification and public consultation. The petitioners note that this lack of notification and public input may have a negative impact on fish habitat. The petitioners ask what legislation and/or regulations authorized Fisheries and Oceans Canada to create these processes and whether the Department is actively monitoring and assessing these letters of advice and operational statements to determine their impact on fish habitat.

Issues: Compliance and enforcement, environmental assessment, fisheries, and human health/environmental health

Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada

Status: Completed

Petition No. 228: The federal government's alleged failure to inspect coal-fired power plants for mercury emissions

Date submitted: 19 December 2007 Petitioner(s): Ecojustice Canada Summary: This petition alleges that the federal government has not yet inspected Ontario's coal-fired power plants to determine if these plants are violating Canada's Fisheries Act by depositing mercury, a deleterious substance, into Canadian waters. The petitioner raises a number of questions regarding mercury emissions from coal-fired plants, and asks whether the federal government has followed through, or intends to follow through by a specified date, on the plan to inspect these plants.

Issues: Compliance and enforcement, human health/environmental health, science and technology, toxic substances, and water

Federal departments/agencies replying: Environment Canada

Status: Completed

Petition No. 229: Installation of cellular towers in Simone, Ontario

Date submitted: 20 December 2007 Petitioner(s): A Canadian resident

Summary: The petitioner is concerned about the installation of a cellular tower adjacent to his property, as well as next to a school, hospital, and nursing home, without any prior notification and/or public consultation. The petitioner alleges that since the installation, he has been suffering from the effects of radiation emitted by the tower. The petitioner asks, among other things, that the Government of Canada remove this tower to protect his own health and that of his family and neighbours.

Issues: Environmental assessment, human health/environmental health, and science and technology Federal departments/agencies replying: Environment Canada, Health Canada, Industry Canada

Status: Reply (replies) received but not yet posted

Petition No. 230: Impact of cellular phone transmitters on human health

Date submitted: 19 December 2007 Petitioner(s): A Canadian resident

Summary: The petitioner is concerned about the recent installation of a cellular phone transmitter 11 metres from his property, and the health impact this may have. Since the installation, the petitioner says that he has been suffering from electromagnetic hypersensitivity. According to the petitioner, he and his family have had to live away from their home and have suffered severe physical, financial, and emotional harm since the transmitter was installed. The petitioner asks Industry Canada and Health Canada to take action. He also raises questions on the notification procedure requirements for these transmitters and on the nature of the studies used to verify their safety.

Issues: Environmental assessment, human health/environmental health, and science and technology

Federal departments/agencies replying: Health Canada, Industry Canada

Petition No. 2308: Follow-up petition on the impact of cellular phone transmitters on human health

Date submitted: 30 June 2008

Petitioner(s): A Canadian resident

Summary: In this follow-up petition, the petitioner seeks further responses from Health Canada and Industry Canada regarding scientific studies on the safety of cellular phone transmitters and on siting and notification procedures for such transmitters.

Issues: Environmental assessment, human health/environmental health, science and technology, and other

Federal departments/agencies replying: Health Canada, Industry Canada

Status: Reply (replies) pending

Petition No. 231: Barrel burning

Date submitted: 3 January 2008

Petitioner(s): John Newell

Summary: The petitioner asks the Government of Canada to put a federal policy in place to prohibit the practice of barrel burning in Canada. According to the petitioner, barrel fires burn garbage inefficiently. In addition, the low temperatures at which barrel fires burn do not destroy the chemicals. Instead, the chemicals are released into the air in more lethal forms. The petitioner alleges that people who are repeatedly exposed to barrel-burning emissions have an increased risk of suffering from severe health problems.

Issues: Air quality, compliance and enforcement, federal-provincial relations, human health/environmental health, and toxic substances

Federal departments/agencies replying: Environment Canada, Health Canada, Industry Canada

Status: Completed

Putition No. 232: Radioactive waste cleanup in Port Hope, Ontario

Date submitted: 4 January 2008

Petitioner(s): Pat McNamara

Summary: This petition concerns radioactive contamination and waste cleanup projects in Port Hope, Ontario. The petitioner is concerned about the extent of the contamination, the scope and assessment of the cleanup projects, and the health risks posed by the contamination and cleanup initiatives. The petitioner raises several questions about the federal government's past and future actions in dealing with this issue. The petitioner also questions the low level of environmental assessment currently required for nuclear projects.

Issues: Environmental assessment, human health/environmental health, natural resources, toxic substances, and waste management

Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada, Health Canada, Natural Resources Canada

Petition No. 233: Health risks posed by radiation exposure in Port Hope, Ontario

Date submitted: 4 January 2008

Petitioner(s): Pat McNamara

Summary: The petitioner is concerned about health risks posed by exposure to radiation. He is also concerned about the levels of radiation considered allowable in Canada. The petitioner questions the way Canada establishes allowable radiation levels. He suggests that the precautionary principle should be followed in establishing the levels of radiation allowed. He also wants to know why Canada has a different allowable level for tritium in drinking water than that allowed by the European Union and the United States. Finally, the petitioner seeks answers regarding the results of the November 2007 bio-testing of residents in Port Hope, Ontario, which showed the presence of uranium in some of the residents' bodies.

Issues: Human health/environmental health, natural resources, toxic substances, waste management, and water

Federal departments/agencies replying: Health Canada, Natural Resources Canada, Public Health Agency of Canada

Status: Reply (replies) received but not yet posted

Petition No. 234: Radioactive contamination in Port Hope, Ontario

Date submitted: 4 January 2008
Petitioner(s): Ms. N. Sarah Clayton

Summary: This petition is about radioactive and industrial contamination in the town of Port Hope, Ontario. The petitioner is concerned about health risks posed by the alleged contamination of an elementary school, and seeks answers from the federal government about actions taken on this issue. The petitioner also raises several questions on the environmental assessment process for the Port Hope Long-Term Low-Level Radioactive Waste Management Project.

Issues: Environmental assessment, human health/environmental health, natural resources, toxic substances, and waste management

Federal departments/agencies replying: Environment Canada, Health Canada, Natural Resources Canada

Status: Completed

Petition No. 235: Health risks posed by electromagnetic radiation exposure from cellular towers

Date submitted: 4 January 2008

Petitioner(s): Frank Woodcock

Summary: The petitioner is concerned about the guidelines of Safety Code 6, because a cellular tower has been installed 300 metres from his property without any public consultation. He is concerned about the health effects of the microwave radiation emanating from this tower. The petitioner asks Health Canada and Industry Canada whether it is safe to be exposed to electromagnetic radiation.

Issues: Environmental assessment, human health/environmental health, and science and technology

Federal departments/agencies replying: Health Canada, Industry Canada

Petition No. 235B: Follow-up petition on the health risks posed by electromagnetic radiation

Date submitted: 24 June 2008 Petitioner(s): Frank Woodcock

Summary: In this follow-up petition, the petitioner alleges that the guidelines outlined in Safety Code 6 are outdated and are based on incorrect assumptions. The petitioner questions the objectivity of studies that were cited by the government and that, he claims, were funded by the cell phone industry or were from individuals with vested interests. The petitioner asks Health Canada to consider studies with other points of view and to consider implementing a precautionary approach to the electromagnetic radiation exposure of Canadians.

Issues: Human health/environmental health, science and technology, and other

Federal departments/agencies replying: Health Canada, Industry Canada

Status: Reply (replies) pending

Petition No. 235: Nuclear-related environmental health concerns in Port Hope, Ontario

Date submitted: 4 January 2008

Petitioner(s): Port Hope Community Health Concerns Committee

Summary: This petition concerns the potential health and environmental impact of two nuclear facilities and of the radioactive and heavy metal wastes present in the town of Port Hope, Ontario. The petitioner seeks answers about health risks posed by the emissions from these wastes and by cumulative exposure to radioactive and heavy metal wastes in the area. The petitioner also requests that health studies and investigations be undertaken to assess and monitor the health of the community. Finally, the petitioner raises questions about the level of environmental assessment used for nuclear projects and requests that human health considerations be included among the criteria for environmental assessments and the licensing of nuclear projects.

Issues: Environmental assessment, human health/environmental health, natural resources, toxic substances, and waste management

Federal departments/agencies replying: Environment Canada, Health Canada, Natural Resources Canada, Public Health Agency of Canada

Status: Reply (replies) received but not yet posted

Pontion No. 237: Low-level radioactive waste cleanup project in Port Hope, Ontario

Date submitted: 4 January 2008

Petitioner(s): Larry Hall

Summary: This petition relates to the Port Hope Area Initiative, a \$260-million project agreed on by the Government of Canada and the municipalities of Port Hope and Clarington, for undertaking a cleanup of low-level radioactive waste in the area. According to the petitioner, the project is running behind schedule and he is worried that continuing delays could be costly for the municipalities and area residents. The petitioner seeks answers from the federal government about why it is taking so long, how much money has been spent, and what is being done on this issue.

Issues: Environmental assessment, governance, natural resources, toxic substances, and waste management

Federal departments/agencies replying: Environment Canada, Natural Resources Canada

Petition No. 238: Water and sediment contamination of the Athabasca River due to oilsands production

Date submitted: 4 January 2008

Petitioner(s): Keepers of the Athabasca Alliance

Summary: The petitioner is concerned about water and sediment contamination downstream of industrial oilsands development on the Athabasca River, the Peace/Athabasca Delta, and Lake Athabasca. The petitioner is concerned that this contamination may affect the health of the people of Fort Chipewyan, Alberta.

Issues: Aboriginal affairs, fisheries, human health/environmental health, toxic substances, and water

Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada, Health Canada

Status: Reply (replies) received but not yet posted

Petition No. 239: Development of the Nahanni National Park Reserve

Date submitted: 29 January 2008

Petitioner(s): NWT & Nunavut Chamber of Mines

Summary: The petitioner is concerned about the transparency and objectivity of the consultation process for the development of the Nahanni National Park Reserve in the Northwest Territories. In particular, the petitioner raises questions on the Mineral and Energy Resource Assessment (MERA) process related to the proposed expansion of the park. The petitioner also focuses questions on the balance between conservation and economic development objectives.

Issues: Aboriginal affairs, environmental assessment, natural resources, toxic substances, and water

Federal departments/agencies replying: Indian and Northern Affairs Canada, Natural Resources Canada,

Parks Canada Agency

Status: Completed

Petition No. 240: Environmental concerns regarding the Cacouna Marsh

Date submitted: 7 February 2008
Petitioner(s): Gérard Michaud

Summary: The petitioner is concerned about the steady environmental degradation of the land adjacent to the Cacouna Marsh. He makes a number of requests to the responsible departments, including balancing the operations and maintenance of the neighbouring industrial sites with the measures taken to conserve and protect the Marsh.

Issues: Biological diversity, environmental assessment, human health/environmental health, water, and other

Federal departments/agencies replying: Environment Canada, Transport Canada

Petition No. 241: Mercury waste from compact fluorescent lightbulbs entering the environment

Date submitted: 28 March 2008 Petitioner(s): Gaston Hervieux

Summary: The petitioner asks what action the federal government has taken to safely recycle compact fluorescent lightbulbs, given that they contain mercury and present a danger to public safety and ecosystems. He claims that no method of any kind, such as packaging that could be reused to discard these lightbulbs in recycling bins, has been put in place to prevent this type of pollution. The petitioner requests, among other things, that various departments take action on this matter. He also asks for an explanation of the laws and regulations that apply to this issue, the size of the market for compact fluorescent lightbulbs, and the impact of this pollution on species at risk and on fish habitats.

Issues: Compliance and enforcement, fisheries, human health/environmental health, toxic substances, and waste management

Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada, Health Canada, Industry Canada, Public Health Agency of Canada

Status: Reply (replies) received but not yet posted

Petition No. 242: Use of road salt at the 2010 Vancouver Olympics Cypress Bowl venue

Date submitted: 24 March 2008 Petitioner(s): Bruce McArthur

Summary: The petitioner is concerned about the use of road salt to clear snow from the access road and parking areas at the 2010 Vancouver Olympics Cypress Bowl venue. According to the petitioner, this contravenes an environmental assessment commitment to not use road salt at the site, covering the period from initial construction activities up to decommissioning of the Olympics infrastructure. The petitioner asks the federal government, among other things, what action will be taken to correct the situation.

Issues: Compliance and enforcement, environmental assessment, federal-provincial relations, human health/environmental health, and transport

Federal departments/agencies replying: Canadian Heritage, Environment Canada, Fisheries and Oceans Canada, Health Canada, Public Works and Government Services Canada

Petition No. 243: Use of fluoride (fluorosilicates) in drinking water

Date submitted: 17 April 2008 Petitioner(s): Robert Button

Summary: The petitioner seeks responses from the government on the addition of fluoride (fluorosilicates) to the water supply, which the petitioner alleges is a drug and is dispensed as a drug, but has never been approved as a drug. In addition, the petitioner claims that Canadian consumers cannot be reasonably expected to know the stated risks of fluoridated water. The petitioner raises questions concerning the government's definition. management, and regulation of fluoride.

Issues: Human health/environmental health, toxic substances, and water

Federal departments/agencies replying: Health Canada, Public Health Agency of Canada

Status: Completed

Petition No. 244: Harm to susceptible populations of aquatic life and humans due to the addition of fluoride (fluorosilicates) in drinking water

Date submitted: 18 April 2008 Petitioner(s): James S. Beck

Summary: The petitioner seeks responses from the government on the addition of fluoride (fluorosilicates) in our drinking water, which he alleges causes adverse health effects on humans. The petitioner further claims that the addition of fluoride is also toxic and harmful to certain land species as well as to some species of fish. The petitioner raises several questions on the safe dosage and concentration levels of fluoride.

Issues: Fisheries, human health/environmental health, toxic substances, and water

Federal departments/agencies replying: Health Canada, Public Health Agency of Canada

Status: Completed

Petition No. 245: Impact of fluorosilicate compounds on lead levels in drinking water and on water distribution infrastructure

Date submitted: 2 May 2008

Petitioner(s): Environmental Training Institute

Summary: The petitioner seeks responses from several departments on potential health concerns related to increased levels of lead in drinking water due to fluoridation. In addition, the petitioner alleges that fluorosilicates have a detrimental effect on water distribution infrastructure and asks whether the government has carried out related cost assessments.

Issues: Environmental assessment, fisheries, human health/environmental health, toxic substances, and water Federal departments/agencies replying: Environment Canada, Department of Finance Canada, Fisheries and Oceans Canada, Health Canada, Public Health Agency of Canada, Public Works and Government Services Canada, Treasury Board of Canada Secretariat

Petition No. 246: Potential environmental impacts of a proposed housing development project in Mission, British Columbia

Date submitted: 12 May 2008

Petitioner(s): A Canadian resident

Summary: The petitioner is concerned about potential adverse environmental impacts of a proposed 3,400-acre housing development project in Mission, British Columbia. The petitioner claims that this project would have major impacts on the aquatic ecosystems and terrestrial wildlife of this area. The petitioner asks that federal departments ensure that, among other things, comprehensive environmental assessments of this project be carried out.

Issues: Biological diversity, compliance and enforcement, environmental assessment, fisheries, and water

Federal departments/agencies replying: Environment Canada, Fisheries and Oceans

Status: Completed

Petition No. 247: Environmental health impact of electromagnetic radiation

Date submitted: 22 May 2008

Petitioner(s): A Canadian resident

Summary: The petitioner alleges that since 1999, scientific research has indicated an increase in health impacts related to electromagnetic radiation from cellular towers and other sources. The petitioner asks several departments to review Safety Code 6, to pass regulations for safer siting of cellular towers, and to mandate labelling of electromagnetic radiation levels of everyday products.

Issues: Compliance and enforcement, environmental assessment, human health/environmental health, and science and technology

Federal departments/agencies replying: Health Canada, Industry Canada

Status: Reply (replies) pending

Perlian No. 248. Environmental impact of toxic chemicals leaking into Lake Ontario

Date submitted: 26 May 2008

Petitioner(s): A Canadian resident

Summary: The petitioner is concerned about the environmental impact of toxic chemicals leaking into Lake Ontario from a uranium processing facility in Port Hope, Ontario. The petitioner asks federal departments what action has been taken and if the company has been given a deadline to remediate the contamination. The petitioner also asks the departments for independently verified information on the amount of contaminants released into the lake.

Issues: Compliance and enforcement, fisheries, human health/environmental health, toxic substances, and water

Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada

Petition No. 249: Potential environmental impact of the Devils Lake outlet project on Canadian waters

Date submitted: 12 June 2008

Petitioner(s): The Manitoba Chambers of Commerce and Friends of the Earth

Summary: The petitioners are concerned about the potential environmental impact that the Devils Lake outlet project in the United States may have on the Red River and Lake Winnipeg and their commercial and recreational fisheries. They are worried that the outlet project may cause water pollution and introduce invasive species that will harm the environment and the economy of communities around the Red River Basin and Lake Winnipeg. Among other things, the petitioners ask what the government is doing to advance and enforce the related 2005 agreement between Canada and the United States and to prevent and monitor the impact of the project.

Issues: Governance, human health/environmental health, international cooperation, and water

Federal departments/agencies replying: Environment Canada, Fisheries and Oceans, Foreign Affairs and

International Trade Canada

Status: Reply (replies) pending

Petition No. 250: Petition withdrawn

Petition No. 251: Federal policy related to potential bulk freshwater exports

Date submitted: 17 June 2008 Petitioner(s): Erinn Burke

Summary: The petitioner is concerned about the absence of federal policy to protect Canada's freshwater from being exported in bulk and/or diverted and asks the federal government, among other things, to explain its strategy for protecting Canadian freshwater. The petitioner is also concerned about the impact of trade agreements on this issue and asks the government what is being done to revise the current NAFTA definition of water, which may help protect Canada's water resources.

Issues: Federal-provincial relations, international cooperation, natural resources, and water

Federal departments/agencies replying: Environment Canada, Foreign Affairs and International Trade Canada, Natural Resources Canada

Status: Reply (replies) pending

Petition No. 252: Environmental health issues related to a hydroelectric transmission project in Tsawwassen, British Columbia

Date submitted: 17 June 2008

Petitioner(s): A Canadian resident

Summary: The petitioner alleges that a significant, new hydro transmission project in their community will cause immediate and long-term health issues for the residents. In addition, the petitioner claims that this project will pose a threat to both endangered and migratory birds.

Issues: Biological diversity, compliance and enforcement, human health/environmental health, science and technology, and other

Federal departments/agencies replying: Department of Justice Canada, Environment Canada, Foreign Affairs and International Trade Canada, Health Canada, Industry Canada, Public Safety and Emergency Preparedness Canada

Status: Reply (replies) pending

Petition No. 253: Potential adverse health effects from phones using Digital Enhanced Cordless Telecommunications

Date submitted: 20 June 2008 Petitioner(s): Magda Havas

Summary: The petitioner is concerned that phones using Digital Enhanced Cordless Telecommunications (DECT) may expose people to adverse health effects from electromagnetic radiation. The petitioner requests a ban on these phones. In addition, the petitioner asks what the federal government is doing to protect Canadians from these potential adverse health effects and what research it is conducting or funding on the safety of this technology.

Issues: Human health/environmental health, and other

Federal departments/agencies replying: Health Canada, Industry Canada

Status: Reply (replies) pending

Petition No. 254: Environmental and human health effects of compact fluorescent light bulbs

Date submitted: 23 June 2008

Petitioner(s): Magda Havas and Thomas Hutchinson

Summary: The petitioners are concerned about a number of environmental and human health issues associated with compact fluorescent light bulbs. The petitioners state that these issues include emissions of ultraviolet (UV) and radio frequency radiation, the generation of electrical pollution, the mercury content in the bulbs, and safe recycling and disposal. The petitioners allege that compact fluorescent light bulbs make some people ill and ask the government to take measures to reduce or eliminate the problems associated with them and to consider alternative technologies.

Issues: Climate change, human health/environmental health, toxic substances, waste management, and other

Federal departments/agencies replying: Environment Canada, Health Canada, Industry Canada, Natural Resources Canada

Status: Reply (replies) pending

Petition No. 255: Health impact of electromagnetic radiation from telecommunication towers located in close proximity to residential areas

Date submitted: 25 June 2008

Petitioner(s): Dennis Noble and Sharon L. Noble

Summary: The petitioners allege that electromagnetic radiation emitted from telecommunication towers is causing significant health issues to people living in close proximity to these transmitters. The petitioners raise questions about the objectivity of scientific studies supporting the government's position related to the potential health hazards of electromagnetic radiation and about the perceived independence of department

staff assessing these studies. In addition, the petitioners request that Health Canada invoke the precautionary principle in order to safeguard Canadians.

Issues: Governance, human health/environmental health, science and technology, and other

Federal departments/agencies replying: Health Canada, Industry Canada

Status: Reply (replies) pending

Petition No. 256: Policies and regulations under the Canadian Environmental Protection Act, 1999

Date submitted: 25 June 2008

Petitioner(s): Calvin Dempster and a Canadian resident

Summary: The petitioners raise concerns about what they believe are shortcomings in some of the policies and regulations that are part of the Canadian Environmental Protection Act, 1999 (CEPA 1999). They ask the government several questions about, among other things, the Environmental Emergency Regulations, public participation, the Masked Name Regulations, the assessment and management of toxic substances, the Virtual Elimination List, and enforcement of CEPA 1999.

Issues: Compliance and enforcement, governance, and toxic substances

Federal departments/agencies replying: Environment Canada, Health Canada

Status: Reply (replies) pending

Petition No. 257: Potential environmental and health impacts of soil contaminated with heavy metal and deposited in a landfill near Lake Erie

Date submitted: 26 June 2008

Petitioner(s): Alexander Davidoff and Olivera Davidoff

Summary: The petitioners allege that soil contaminated with heavy metal has been deposited in a landfill site close to Lake Erie. The petitioners are concerned about the potential environmental and health impacts, such as contamination of groundwater and harm to fish habitat and ecosystems. The petitioners request that the contaminated soil be removed from the landfill and that certain federal departments assess the potential risks to Canadians and ecosystems.

Issues: Fisheries, human health/environmental health, toxic substances, and water Federal departments/agencies replying: Environment Canada, Health Canada

Status: Reply (replies) pending

Petition No. 258: Alleged pumping of water contaminated with mercury from a brownfleld development into a sewer system near Lake Ontario

Date submitted: 26 June 2008

Petitioner(s): Alexander Davidoff and Olivera Davidoff

Summary: The petitioners allege that water contaminated with mercury was pumped from a brownfield development into a sewer system that spills into Lake Ontario. They are concerned about the related potential environmental and health impacts, such as contamination of drinking water and harm to Lake Ontario fish

habitat and ecosystems. The petitioners ask the federal government whether it will conduct health studies on the communities near Lake Ontario.

Issues: Compliance and enforcement, fisheries, human health/environmental health, toxic substances, and water

Federal departments/agencies replying: Environment Canada, Health Canada

Status: Reply (replies) pending

Portrion No. 259: Health concerns related to the construction of a high-voltage power line in Tsawwassen, British Columbia

Date submitted: 27 June 2008

Petitioner(s): John R. Bulloch and Dr. Bruce D. Owen

Summary: The petitioners are concerned about the potential health impacts that the construction of a high-voltage power line in a densely populated area of Tsawwassen, British Columbia, could cause to people living near the power lines. The petitioners present summaries of studies related to electromagnetic effects on human health, and would like to know, among other things, who has the authority to halt the construction of the power line. In addition, the petitioners ask questions related to health concerns raised during the environmental assessment of the power line project.

Issues: Environmental assessment, federal-provincial relations, human health/environmental health, and other Federal departments/agencies replying: Environment Canada, Fisheries and Oceans Canada, Health Canada

Status: Reply (replies) pending

Petition No. 260: Electromagnetic sensitivity

Date submitted: 30 June 2008

Petitioner(s): Joanne March Laberge

Summary: The petitioner is concerned that there is little research being conducted to understand pain and discomfort caused by electromagnetic sensitivity and to help people suffering from it. The petitioner wants to know what the federal government has done to acknowledge and deal with this illness and to warn Canadians of the dangers of electromagnetic fields.

Issues: Human health/environmental health, and other Federal departments/agencies replying: Health Canada

Status: Reply (replies) pending

Petition No. 261: Public participation process related to the Sydney Tar Ponds and Coke Ovens Remediation Project

Date submitted: 30 June 2008

Petitioner(s): Sierra Club of Canada

Summary: The petitioner is concerned that recommendations made by the Joint Review Panel, with respect to public participation in the Sydney Tar Ponds and Coke Ovens Remediation Project, have not been implemented adequately. The petitioner is worried that the actual process for community participation is not open and transparent and that it lacks sufficient public input. The petitioner presents several recommendations to the government to improve the public participation process.

Issues: Environmental assessment, human health/environmental health, and waste management

Federal departments/agencies replying: Environment Canada, Public Works and Government Services

Canada

Status: Reply (replies) pending



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